APPENDIX I

USEPA AND EQUIS HAPSITE SAMPLE FIELD SHEETS

USEPA FIELD SHEETS PROVIDED IN ELECTRONIC COPY ONLY

USEPA FIELD SHEETS PROVIDED IN ELECTRONIC COPY ONLY

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 1 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-1-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB04, 3-4 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/4/09	17:25
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC NO PCBs
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

1-8oz combined

1-8oz combined

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Extra Volume for MS/MSD for SVOCs, UAA Pesticides & Herbicides (FULL 8oz glass jars).

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 2 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-04, 10-11 ft

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	17:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC No PCBs
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 3 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-3-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-04 16-17ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	18:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil] 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC No PCBs
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC] 1-8oz.
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 4 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-4-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-04, 18-20ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	18:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC No PCBs
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

1-8oz
1-8oz

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~5~~ ~~AB~~ 4-FD 8/4/09 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-~~5~~ ~~AB~~ -4 8/4/0

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 04, 18-20ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/4/09	18:06
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC NO PCBs
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A) MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 7 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-7-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB29, 15-16 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	15:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC ~~(No PCB)~~ AB 8/6/09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

1-8oz combine
1-8oz combined

Sample Comments:

(N/A)

Media Soil

Samp Meth OPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 8 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB29, 18-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/5/09	15:35
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil] 1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC ~~No PCBs~~
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC] 1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~9~~ 8 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~9~~ 8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB29, 18-20ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 15:36

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil 8oz combined
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC (NO PCBs)
1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC 8oz combined
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Field duplicate of #4518-8

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 10 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-10-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB31, 0-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/5/09	16:20
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil 1-8oz jar
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (~~No PCBs~~) 8-6-09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC 1-8oz jar
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 11 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-11-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB31, 5-6ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	16:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis	
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap	
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (No ~~PCB~~) 8-6-09	
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC	

Sample Comments:

(N/A)

MEDIA

Samp. Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 12 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-12-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 31, 10-11 ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/5/09	16:35
End:	__/__/__	__:__

Latitude: __ __ __
Longitude: __ __ __

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis	
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap	
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC ~~(PCBs No)~~ 8-6-09	
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC	

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 13 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-13-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB31, 18-20ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	16:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil] 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (No [illegible]) 8-6-09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC] 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~14~~ 13 AB 8/5/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~14~~ 13 AB 8/5/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB31, 18-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___		**Sample Collection: Start:**	8/5/09	16:47
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (~~No PCBs~~ 8-5-09)
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

2-8oz combined
~~1-8oz~~ AB 8/5/09

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Field Duplicate of #4518-13

~~only enough sample recovered to fill 1 8oz glass jar for Field Duplicate~~ AB 8/5/09

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 15 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-15-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB05, 1.3-2.3 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	17:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil] 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (No PCBs) 8-6-09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC] 1-8oz
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 16 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-16-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB05, 9-10ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 17:30
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis	
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap	
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil	1 - 8oz
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC ~~(NO PCBs)~~	8-6-09
1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC	8oz
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC	

Sample Comments:

(N/A)

MEDIA Soil

Sampling Meth. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 17 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-17-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB05, 13.5-14.5 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/5/09 17:45

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil 1-807
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (~~NO PCBS~~) 8-6-09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC 1-807
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A) MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 18 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-18-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-24, 0-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	08:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil 1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC ~~(No PCB)~~ 8-6-09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC 1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 19 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-19-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB24, 5-7 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/6/09	08:45
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~20~~ 19 (AB 8/6/09) **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~20~~ 19 (AB 8/6/09)

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB24, 5-7 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/6/09	08:47
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil 1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (PCBs)
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC 1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Field Duplicate of #4518-19

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 21 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-21-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB24, 10.5-12 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	09:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

	Container	Preservative	Holding Time		Analysis
9	~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
	1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
	1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC (PCB ~~Not analyzed~~) 1-8oz combine 8-6-09
	1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC
	1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC 1-8oz combined

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Extra Volume for MS/MSD

2 FULL 8 oz jars for Pesticides, Herbicides & SVOCs MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 22 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-22-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB24, 15-16 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 09:15
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC (~~No PCBs~~)
1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC

1-8oz combined
JG 8-6-09
1-8oz combined

Sample Comments

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 23 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-23-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB24, 19-20ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 09:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC (No PCBs)
1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC

1-8oz combined

8-6-09 1-8oz combined

Sample Comments

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 24 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-24-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB23, 0.5-1.5 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 09:35

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil] 1-8oz combined
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC (No ~~PCBs~~) 8-6-09
1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC] 1-8oz combined
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC

Sample Comments

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 25 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-25-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB23, 9-10 ft bgs

External Sample Number: ____________

Expected Conc	(or Circle One: Low Medium High)	**Date**	**Time(24 hr)**
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	09:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis	
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap	
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil	1-8oz combined 8-6-09
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC ~~(No PCBs)~~	
1 - 8 oz glass	4 Deg C	14	Days	1 UAA Pesticides in Soil by GC/EC	1-8oz combined
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC	

Sample Comments

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 26 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-26-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB23, 14-15 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 10:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis	
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap	
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC (NO PCBs)	
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC	1-8oz combined 8-6-09
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC	

Sample Comments

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 27 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-27-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB23, 19-20 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 10:10

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC ~~(No PCBs)~~
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

1-8oz combined 8-6-09

1-8oz combined

Sample Comments

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 28 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-28-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-20, 0-1.5

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 10:38

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA-5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~
3 ~~1~~ - 8 oz glass	4 Deg C	14 Days	1 ~~Semi-Volatile Organic Compounds in Soil~~ PCBs in Soil ONLY
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 UAA Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Herbicides in Soil by GC/EC~~

AB 8/6/09

Sample Comments
(N/A)

MEDIA SOIL

Samp Meth DPT

Extra Volume for MS/MSD
(PCBs in Soil)

3-8oz glass 4°C 14 Days 1 Pesticedes in Soil by GC/EC

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 29 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-29-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB20, ~~6.5~~ 6-6.5 ft bgs

External Sample Number: ______

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 10:44

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Semi-Volatile Organic Compounds in Soil~~ PCBs in Soil ~~ONLY~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 UAA Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Herbicides in Soil by GC/EC~~

AB 8/6/09

Sample Comments

(N/A)

MEDIA SOIL

Samp Meth DPT

1-8oz glass 4°C 14 Days 1-Pesticides in Soil by GC/EC

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 30 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-30-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB20, 9.5-10 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	10:47
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40ml VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Semi-Volatile Organic Compounds in Soil~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 UAA Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Herbicides in Soil by GC/EC~~

~~PCBs in Soil ONLY~~

AB 8/6/09

Sample Comments

(N/A)

MEDIA SOIL

Samp Meth DPT

1-8oz glass 4°C 14 Days 1 Pesticides in Soil by GC/E

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 31 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-31-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB21, 0-0.5 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	10:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Semi-Volatile Organic Compounds in Soil~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 UAA Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Herbicides in Soil by GC/EC~~

~~PCBs in Soil ONLY~~

AB
8/6/09

Sample Comments

(N/A)

MEDIA SOIL

Samp Meth DPT

1-8oz glass 4°C 14 Days 1 Pesticides in Soil by GC/EC

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 32 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-32-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB21, 5.5-6 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/6/09 10:58
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA-5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Semi-Volatile Organic Compounds in Soil~~ PCBs in Soil ONLY
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 UAA Pesticides in Soil by GC/EC~~ AB
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Herbicides in Soil by GC/EC~~ 8/6/09

Sample Comments

(N/A)

MEDIA SOIL

SampMeth DPT

1-8oz glass 4°C 14 Days 1 Pesticides in Soil by GC/EC

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 33 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-33-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB21, 9.5-10 ft bgs

External Sample Number: ____________

Expected Conc (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 11:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Semi-Volatile Organic Compounds in Soil~~ PCBs in Soil ONLY
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 UAA Pesticides in Soil by GC/EC~~
~~1 - 8 oz glass~~	~~4 Deg C~~	~~14 Days~~	~~1 Herbicides in Soil by GC/EC~~

Sample Comments

(N/A)

Media Soil

Samp Meth DPT

1-8oz glass 4°C 14 Days 1-Pesticides in Soil by GC/EC

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 34 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-34-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32, 15-16ft bgs

External Sample Number: ________

Expected Conc (or Circle One: Low Medium High) **Date** 8/7/09 **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 AB ~~8/6/09~~ 12:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis	
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~	AB 8/6/09
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC	
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC	1-8oz combined
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC	

Sample Comments

(N/A)

MEDIA SOIL

Samp Meth DPT

Background Soil Sampling Location

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 35 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-35-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-12, 0-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/4/09	11:10
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
12 ~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) Media - Soil

Sampling Method - DPT

Extra Volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 36 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-36-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-12, 5-6ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	11:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) Media - Soil

Sampling Method - DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 37 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-37-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 12 ; 10-11 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/4/09	11:45
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil

Samp. Meth - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 38 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-38-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB12, 15-16 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	11:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil

Samp. Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 39 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-39-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 12, 19-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	11:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil

Samp. Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 40 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-40-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB11, 0-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 12:10

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil

Samp. Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 41 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-41-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB11, 5-6 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/4/09	12:20
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil

Samp Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 42 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-42-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB11, 10-11 ft bgs

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	12:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil

Samp. Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 43 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-43-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB11, ~~15-16 ft bgs~~ AB 8/4/09 16-17 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	12:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - Soil
Samp. Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 44 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-44-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB11, 19-20 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 ~~12:45~~ AB 8/4/09 12:47

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) Media - Soil

Samp. Meth. - DPT

Field Dup of 4518-44

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~45~~ 44 AB 8/4/09 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-~~45~~ 44 AB 8/4/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB11, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/4/09	12:45
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media - SOIL

Samp. Meth. - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 46 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-46-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-09, 0-1 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/4/09	13:00
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 47 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-47-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB09, 6-7 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___		**Sample Collection: Start:**	8/4/09	13:10
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 48 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-48-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-09, 15-16 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/4/09 13:25

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA-5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~49~~ 48 AB 8/4/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~49~~ 48 AB 8/4/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-09, 15-16 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/4/09	~~13:25~~ 13:27 AB 8/4/09
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

FIELD Duplicate of 4518-48

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 50 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-50-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-09, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/4/09	13:30
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMPMETH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 51 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-51-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: ~~SB-09~~ AB 8/4/09 SB07, 1.5-2ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	14:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 52 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-52-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB07, 5-6 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	14:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet

Ci

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 53 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-53-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB07, 15-16 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	14:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA - SOIL

SAMP METH - DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~54~~-AB 53 8/4/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~54~~-AB 53 8/4/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB07, 15-16 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 14:16
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1. VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) MEDIA SOIL

SAMP METH DPT

Field Duplicate of 4518-53

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 55 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-55-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB07, 19-20ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 14:25

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
9 ~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Extra Volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 56 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-56-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB22, 2-2.5ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/4/09	15:05
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP. METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 57 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-57-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB22, 7-7.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	15:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 58 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-58-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB22, 10-11 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: __.__ __ __	**Sample Collection:**	**Start:**	8/4/09	15:25
Longitude: __ __ __		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 59 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-59-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB22, 15-16 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	15:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 60 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-60-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB22, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/4/09	15:35
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

JG 8/4/09 **Laboratory Analyses:**

Container	Preservative	Holding Time	Analysis
~~2~~ 4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

~~Extra Volume for MS/MSD~~ AB 8/4/09

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~61~~ 60 AB 8/14/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~61~~ 60 AB 8/14/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB22, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 15:36

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Field Duplicate of 4518-60

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 62 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-62-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-01, 0.5-1 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	16:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 63 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-63-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB01, 6-7 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 16:05

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP. METH. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 64 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-64-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB01, 10.5-11 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	16:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 65 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-65-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB01, 15-16 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/4/09	16:20
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 ~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Extra Volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 66 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-66-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB01, 19-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/4/09 16:25
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~67~~ 66 (B) 8/4/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~67~~ 66 (AB) 8/4/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB01, 19-20ft bgs

External Sample Number: ____

Expected Conc:	(or Circle One: Low Medium High)		**Date**	**Time(24 hr)**
Latitude: ___ ___ ___		**Sample Collection: Start:**	8/4/09	16:26
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP. METH. DPT

Field Duplicate of 4518-66

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 68 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-68-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-03, 4-5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 16:35
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 69 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-69-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB03, 11.5-12 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	16:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 70 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-70-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB03, 16.5-17 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	17:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 71 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-71-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB03, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/4/09	17:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~72~~ 71 AB 8/4/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~72~~ 71 AB 8/4/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB03, 19-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/4/09 17:06

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 73 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-73-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB14, 7-8ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 10:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 74 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-74-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-14, 10.5-11.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	10:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP MEDIA DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 75 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-75-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-14, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 11:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA Soil

Samp. Meth. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~76~~ 75 AB 8/5/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~76~~ 75 AB 8/5/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-14, 19-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 11:01
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Field duplicate of ~~SL~~ AB 8/5/09 #4518-75

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 77 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-77-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-15, 8.5-9 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/5/09	11:20
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 78 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-78-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-15, 12.5-13 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/5/09	11:30
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) MEDIA SOIL
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 79 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-79-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 15, 15-16 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 11:35

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 80 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-80-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB15, 19-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 11:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP METH. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 81 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-81-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 26, 1-2 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	12:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 82 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-82-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB26, 7-8 ft bgs

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	12:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 83 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-83-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB26, 14-15ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/5/09	12:35
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA soil
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 84 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-84-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB26, 19-20 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	12:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 85 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-85-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB25, 4-5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/5/09	13:00
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 86 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-86-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB25, 8-9ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	__/__/__	13:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1. VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 87 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-87-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB25, 14-15ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	13:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 88 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-88-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB25, 19-20ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 13:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 89 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-89-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB27, 0-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	13:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA soil
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 90 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-90-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB27, ~~5-6 ft bgs~~ AB 8/5/09 6-7 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/5/09	13:50
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 91 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-91-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB27, 11-12ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 13:57

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 92 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-92-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB27, 19-20ft

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 14:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~93~~ 92 AB 8/5/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~93~~ 92 AB 8/5/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB27, 19-20ft

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/5/09	14:03
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth : DPT

Field Duplicate of #4518-92

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 94 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-94-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB28, 2-3 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 14:30
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
9 ~~4~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth. DPT

Extra Volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 95 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-95-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB28, 6-7ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 14:35
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

METH SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 96 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-96-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB28, 12-13 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/09	14:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 97 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-97-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB28, 19-20ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 14:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 98 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-98-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB29, 0-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/5/09 15:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~6~~ 99 AB 8/5/09 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-~~6~~ 99 AB 8/5/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB29, 11-12 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/5/__	15:10
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC ~~(Not PCBs)~~ AB 8/6/09
1 - 8 oz glass	4 Deg C	14 Days	1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC

1-8oz Combine

1-8oz combined

Sample Comments:

(N/A) Samp METH DPT

MEDIA SOIL

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 100 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-100-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32, ~~05~~ AB 8/6/09, 0-1 ft bgs
External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	11:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

AB 8/6/09

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~

Sample Comments:

(N/A)

1-8oz glass	4°C	14 days	1 - SVOC in Soil 1 - Pesticides in Soil by GC/EC ~~(NO PCBs)~~ AB 8/6/09
1-8oz glass	4°C	14 days	1 - ULAA Pesticides in Soil by GC/E 1 - Herbicides in Soil by GC/E

MEDIA SOIL

Samp Meth DPT

Background Soil Sample Location

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 101 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-101-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32, 5.5-6.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/6/09	11:40
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

AB 8/6/09

Container	Preservative	Holding Time	Analysis
~~1 - 40mL VOA vials (soil VOA-5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~

Sample Comments:

(N/A)

1-8oz glass	4°C	14 Days	1 - SVOC in Soil 1 - Pesticide in Soil by GC/EC ~~(No PCBs)~~ AB 8/6/09
1-8oz glass	4°C	14 Days	1 - UAA Pesticides in soil by GC/E 1 - Herbicides in soil by GC/EC

MEDIA SOIL

Sampling Meth DPT

Background soil Sampling Location.

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 102 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-102-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-32, 10.5-11.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection:**	**Start:**	8/6/09	11:45
Longitude: __ __ __		**End:**	__/__/__	__:__

Laboratory Analyses:

AB 8/6/09

Container	Preservative	Holding Time	Analysis
~~1 - 40mL VOA vials (soil VOA-5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~

Sample Comments:

(N/A)

1-8oz glass	4°C	14 Days	1 - SVOC in Soil 1 - Pesticides in Soil by GC/EC ~~(No PCBs)~~ AB 8/6/09
1-8oz glass	4°C	14 Days	1 - UAA Pesticides in Soil by GC/EC 1 - Herbicides in soil by GC/EC

MEDIA SOIL

Samp Meth DPT

Background Soil Sampling Location

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 103 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-103-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32, 19-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/6/09	11:55
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

AB 8/6/09

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed System Purge-and-Trap~~

Sample Comments:

(N/A)

1-8oz glass	4°C	14 Days	1-SVOC in Soil 1-Pesticide in Soil by GC/EC ~~(No PCBs)~~ AB 8/6/09
1-8oz glass	4°C	14 DAYS	1-UAA Pesticides in soil by GC/EC 1-Herbicides in Soil by GC/EC

MEDIA SOIL

SAMP Meth DPT

~~SB32 is~~ Background Soil Sampling Location AB 8/6/09

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 104 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-104-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-13, 0.5-1.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___.___ ___ **Sample Collection: Start:** 8/6/09 13:05

Longitude: ___.___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 105 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-105-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB13, 6-6.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ 13:10

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 106 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-106-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB13, 11-11.5 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	13:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp. Meth. DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 107 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-107-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB13, 16.5-17 ft

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 AB 8/6/09 ~~3:35~~ 13:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT.

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 108 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-108-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB13, 19.5-20

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/6/09	13:35
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 109 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-109-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB17, 0-1 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/6/09	13:55
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1-VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap~~ AB 8/6/09
1-8oz glass	4°C	14 Days	1-Pesticides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~110~~ 109 AB 8/6/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~110~~-109 AB 8/6/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB17, 0-1 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	13:56
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~ AB 8/6/09
1-8oz glass	4°C	14 Days	1 Pesticides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Field Duplicate of #4518-109

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~111~~ 110 AB 8/6/09 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-~~111~~-110 AB 8/6/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB17, 6-6.5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/6/09 14:00

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~ AB 8/6/09
1-8oz glass	4°C	14 Days	1- Pesticides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

Samp METH DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~168~~ 111 AB 8/6/09 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-~~168~~ 111 AB 8/6/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB17, 9.5-10 ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	14:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 40mL VOA vials (soil-VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~
1-8oz glass	4°C	14 Days	1 Pesticides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 112 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-112-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-30, 0-1 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/6/09 14:15
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 113 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-113-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB30 ; 5.5 - 6 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 14:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 114 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-114-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB30, 10.5-11 ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	14:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 115 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-115-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB30, 15.5-16

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/6/09	14:40
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

SAMP Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 116 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-116-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 30, 19.5-20

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	14:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 117 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-117-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB16, 0.5-1 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 15:05
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 118 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-118-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB16, 4.5-5ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 15:10
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 119 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-119-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB16, 11.5-12.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 15:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
9 ~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Extra Volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 120 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-120-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB16, 19.5-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/6/09	15:38
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

MEDIA Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 121 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-121-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: ~~8~~ AB 6/8/09 SB18, 0-0.5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	15:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~1 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~ AB 8/6/09
1-8oz glass	4°C	14-days	1 Pesticides in Soil by GC/EC

Sample Comments:

(N/A)

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 122 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-122-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB18, 6.5-7.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/6/09	16:00
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1-8oz glass	4°C	14 Days	1 Pesticides in Soil by GC/EC

Sample Comments:
(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 123 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-123-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB18, 12-13 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	16:10
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1-8oz glass	4°C	14 Days	1-Pesticides in Soil by GC/EC

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 124 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-124-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB18, 17.5-18.5 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 16:25

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

1-8oz glass 4°C 14 Days 1 Pesticides in Soil by GC/EC

MEDIA SOIL

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 125 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-125-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB19, 0-0.5 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/6/09	16:37
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (Soil VOA 5035)~~	~~4 Deg C, H2O 1 sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~
1-8oz glass	4°C	14 Days	1 Pesticides in Soil by GC/EC

FB 8/6/09

Sample Comments:

(N/A)

Media Soil
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 126 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-126-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB19, 4-5ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	16:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~
1-8oz glass	4 °C	14 Days	1 Pesticides in Soil by GC/EC

NB 8/6/09

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** ~~127~~ 126 AB 8/6/09 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4518-~~127~~-126 AB 8/6/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB19, 4-5 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/6/09 ~~16:40~~ AB 8/6/09 16:41
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~4 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap~~

AB 8/6/09

Sample Comments:
(N/A)

1-8oz glass 4°C 14 Days 1 Pesticides in Soil by GC/EC

Media Soil
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 128 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-128-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB19, 9.5-10ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/6/09	16:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
~~1 - 40mL VOA vials (soil VOA 5035)~~	~~4 Deg C, H2O + sodium bisulfate (in 2 vials)~~	~~14 Days~~	~~1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge and Trap~~

JB 8/6/09

Sample Comments:

(N/A)

1-8oz glass 4°C 14 Days 1 Pesticides in Soil by GC/EC

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 129 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-129-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-08, 7.5-8 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/7/09	AB 8/9/09 ~~09:05~~ 10:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 130 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-130-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB08, 12-12.5

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 10:20
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

~~(N/A)~~

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 131 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-131-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 08, 14.5-15 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/7/09	10:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 132 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-132-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB08, 19.5-20 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 10:40
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 133 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-133-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB10, 1.5 - 2 ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 10:55

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 134 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-134-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB10, ~~8-8.5 ft bgs~~ 7-7.5 ft bgs
AB 8/7/09
External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/7/09 11:10
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 135 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-135-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB10, 12-12.5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 11:25

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 136 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-136-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB10, 16-16.5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 11:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 137 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-137-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB10, 19.5-20ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/7/09 11:45
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A) Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 138 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-138-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: ~~SB32~~ AB 8/7/09 SB02: 0.5-1ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/8/09	09:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 139 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-139-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 7-7.5ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/8/09 09:16

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 140 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-140-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 11-11.5ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/8/09	09:13
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 141 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-141-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 15-16 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/8/09 09:17
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 142 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-142-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 21-22 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/8/09	9:25
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil
Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 143 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-143-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 27-28 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/8/09	9:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 144 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-144-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 34-35 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/8/09 9:43
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
9 ~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Extra Volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 145 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-145-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 44-45 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/8/09	10:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 146 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-146-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02 : 54-55

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	___ ___ ___	**Sample Collection: Start:**	8/8/09	10:40
Longitude:	___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 147 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-147-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 64-65 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/8/09	12:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp.Meth. DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 148 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-148-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 70.5-71

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	___ ___ ___	**Sample Collection: Start:**	8/8/09	15:50
Longitude:	___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 149 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-149-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB02: 81-81.5

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/9/09 09:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 150 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-150-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB06: 4-5 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/9/09	11:30
Longitude: ___ ___ . ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 151 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-151-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB06: 9-10 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	___ ___ ___	**Sample Collection: Start:**	8/9/09	11:35
Longitude:	___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 152 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-152-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB06 : 14-15 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/9/09	11:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4518 **Sample Number:** 153 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4518-153-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB06: 19-20 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/9/09	11:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Sample Comments:

(N/A)

Media Soil

Samp Meth DPT

Sample Collected By: JG

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Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4519 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4519-1-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: RINSATE

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/8/09 17:30

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 UAA Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 Herbicides in Water by GC/EC

Sample Comments:

(N/A)

MEDIA GW
Samp Meth NA
QC Rinsate Blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4519 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4519-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-29: 124-128 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/11/09	13:00
Longitude: ___ ___ ___	**End:**	8/11/09	13:50

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 UAA Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 Herbicides in Water by GC/EC

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

* Extra VOLUME (Full 128oz ambers) for MS/MSD

Turbidity > 1000 NTU
Temp = 19.56°C
Cond = 0.456 mS/cm
DO = 5.03 mg/L
pH = 6.74
ORP = 109.2

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4519 **Sample Number:** ~~3~~ 2 AB 8/11/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4519-~~3~~ 2 AB 8/11/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB29 : 124 - 128 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/11/09	13:50
Longitude: ___ ___ ___	**End:**	8/11/09	14:20

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 UAA Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 Herbicides in Water by GC/EC

Sample Comments:

(N/A)

Media GW

Samp Meth DPT

* Field Duplicate of 4519 - 2

Turbidity > 1000 NTU
Temp = 19.56°C
Cond = 0.456 mS/cm
DO = 5.03 mg/L
pH = 6.74
ORP = 109.2

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4519 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 4519-4-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-29 : 119-123 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/11/09	14:35
Longitude: ___ ___ ___		**End:**	8/11/09	15:05

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 128oz amber glass	4 Deg C	7 Days	1 Semi-Volatile Organic Compounds in Water
1 - 128oz amber glass	4 Deg C	7 Days	1 Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 UAA Pesticides in Water by GC/EC
1 - 128oz amber glass	4 Deg C	7 Days	1 Herbicides in Water by GC/EC

Sample Comments:

(N/A)

Media GW

Samp Meth DPT

Turbidity > 1000 NTU
Temp = 20.70°C
Cond = 0.325 mS/cm
DO = 5.05 mg/L
ORP = 40.1
pH = 7.05

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-1-__

Project ID:	BZA72Z01	**Project Manager:**	Brian Zurbuchen
Project Desc:	Garvey Elevator - RI/FS sampling		
City:	Hastings	**State:**	Nebraska
Program:	Superfund		
Site Name:	GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER	**Site ID:** A72Z	**Site OU:** 01

Location Desc: RINSATE

External Sample Number: ______

date switched appropriately @ sh 8/7/09

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	6/8/09	17:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

MEDIA GW

Samp METH NA

QC Rinsate Blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32: 144-148 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/7/09	15:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
12 ~~1~~ 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
6 ~~1~~ 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

JG 8/7/09

Sample Comments:
(N/A)

Media GW
Samp. Meth DPT
QC Extra Volume for MS/MSD

Turbidity >1000 NTU
Temp = 21.54°C
Cond. = 0.534 mS/cm
DO = 4.0 mg/L
pH = 6.78
ORP = 52.1

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-3-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32: 137-141 ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/7/09	16:40
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

Turbidity NA
Temp = NA
Cond = NA
DO = NA
pH = NA
ORP = NA

Not enough sample volume to collect field parameters.

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-4-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 32 : 130-134 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/7/09 17:10

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media GW

Samp Meth DPT

Note: Highly ~~turbed~~ turbid JG 8/8/09 with intrained silts and fine sand

Turbidity > 1000 NTU

Temp = 24.93°C

Cond = 0.44 mS/cm

DO = 0.30 mg/L

pH = 7.05

ORP = 4.1

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-5-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB32: 123-127 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/7/09	17:43
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media GW

Samp Meth DPT

Turbidity > 1000 NTU
TEMp = 28.00°C
Cond = 0.467 mS/cm
DO = 0.59 mg/L
pH = 6.92
ORP = -3.9

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-6-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB13 : 125-129 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/10/09	09:40
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL to pH<2~~ AB 8/10/09	~~14~~ 7 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity > 1000 NTU
Temp = 19.94°C
Cond = 1.063 mS/cm
DO = 3.47 mg/L
pH = 6.57
ORP = 150.7

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** ~~X~~ 6 AB 8/10/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4520-~~X~~-6 AB 8/10/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-13: ~~125f~~ AB 8/10/09 125-129 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/10/09 09:41

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative AB 8/10/09	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL to pH<2~~	7 ~~14~~	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Sampling Meth DPT

* FIELD DUPLICATE of 4520-6

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity > 1000 NTU
Temp = 19.94 °C
Cond = 1,063 ms/cm
DO = 3.47 mg/L
pH = 6.57
ORP = 150.7

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-13: 120-124 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/10/09	10:00
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL to pH<2~~ AB 8/10/09	~~14~~ 7	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity > 1000 NTU
Temp = 18.32°C
Cond = 0.888 mS/cm
DO = 1.61 mg/L
pH = 6.59
ORP = 45.9

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-9-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-13: 126-130 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/10/09	14:50
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL to pH<2~~ AB 8/10/09	~~14~~ 7	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp. Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity >1000 NTU
Temp = 20.98°C
Cond = 0,926 mS/cm
DO = 3.77 mg/L
pH = 6.81
ORP = 56.5

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-10-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-12: ~~4~~ AB 8/10/09 121-125 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/10/09 15:50

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL to pH<2~~ AB 8/10/09	7 ~~14~~	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media GW
Sampling Meth DPT
* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity >1000 NTU
Temp = 19.90°C
Cond = 0.875 mS/cm
DO = 3.40 mg/L
pH = 6.75
ORP = 358

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-11-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-29: 124-128 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/11/09 13:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL to pH<2~~ AB 8/10/09	7 ~~14~~	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence.

Turbidity > 1000 NTU
Temp = 19.56°C
Cond = 0.456 mS/cm
DO = 5.03 mg/L
pH = 6.74
ORP = 109.2

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-12-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-29: ~~124-128~~ AB 8/11/09 119-123 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/11/09 14:35
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to Effervescence

Turbidity > 1000NTU
Temp = 20.70 °C
Cond = 0.325 mS/cm
DO = 5.05 mg/L
pH = 7.05
ORP = 40.1

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-13-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB09: 126-130 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/12/09	08:50
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL~~ to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW

Samp Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity >100 NTU
Temp = 21.17 °C
Cond = 1.250 mS/cm
DO = 4.68 mg/L
pH = 7.08
ORP = 116.7

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4520-14-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB09: 121 - 125 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/12/09	09:15
End:	__/__/__	__:__

Missing at SR 8/13/09 RSCC added

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCL~~ * to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media GW
Samp Meth DPT

* No HCl pressevative in 4-40mL VOAs for LDL VOCs due to effervescence

Turbidity
Temp - 18.5°C
Cond = 0.815 mS/cm
DO = 5.12 mg/L
pH = 7.18
ORP = 88.0

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** ~~15~~ (AB) 14 8/12/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4520-~~15~~-(AB) 14-FD 8/12/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB09: 121 - 125 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/12/09 09:17
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, ~~HCl to~~ pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

MEDIA GW
Samp Meth DPT

* No HCl presservative in 4-40mL VOAs for LDL VOCs due to effervescence

* Field Duplicate of 4520-14

Turbidity >1000 NTU
Temp = 18.5°C
Cond = 0.815 mS/cm
DO = 5.12 mg/L
pH = 7.18
ORP = 88.0

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 37 **QC Code:** FB **Matrix:** Water **Tag ID:** 4520-37-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: EDB & LDL VOA Trip Blank sample 1

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/7/09	16:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TRIP BLANK

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4520 **Sample Number:** 38 **QC Code:** FB **Matrix:** Water **Tag ID:** 4520-38-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: EDB & LDL VOA Trip Blank sample 2

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/11/09	07:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

	Container	Preservative	Holding Time	Analysis
6	40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2	40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TRIP BLANK

Sample Collected By: JG

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Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 1 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-1-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-1

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/24/09 ~~07:53~~ LS 8/24/09 08:16
Longitude: __ __ __ **End:** 8/24/09 16:16

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Canister ID: 4551

Flow Controller ID: 128697 7273199

Initial Press: 29 in/Hg
Final Press: 5 in/Hg

Sample Collected By: JG

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Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 2 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-3

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/24/09	08:15 17
Longitude: __ __ . __	**End:**	8/24/09	16:17

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Canister ID: 3006

Flow Controller ID: 129896 7276838

Initial Pressure: 27 in/Hg

Final Pressure: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 3 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-3-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-5

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	08:18
Longitude: ___ ___ ___	**End:**	8/24/09	16:18

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Canister ID: 4306

Flow Controller ID: 129903 1277168

Initial Pressure: 18 in/Hg

Final Pressure: ~~8~~ 5 19 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 4 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-4-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG - 6

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	08:19
Longitude: ___ ___ ___	**End:**	8/24/09	16:19

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Canister ID: ~~3003~~ 3013 LS 8/24/09

Flow Controller ID: 128698 7273046

Final Pressure: ~~27~~ LS 0 in/Hg

Initial Pressure: 27 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 5 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-5-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-7

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	08:20
Longitude: ___ ___ ___	**End:**	8/24/09	16:20

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Canister ID. 02994

Flow Controller ID: 128519 ~~7273212~~

Initial Pressure: 28 in/Hg

Final Pressure: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 6 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-6-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-9

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	08:25
Longitude: ___ ___ ___	**End:**	8/24/09	16:25

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Canister ID: 3007

Flow Controller ID. FC-30

Initial Pressure: 27 in/Hg

Final Pressure: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 7 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-7-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-10

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	8:24
Longitude: ___ ___ ___	**End:**	8/24/09	16:24

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Canister ID: 3030
Flow Controller ID: ~~129899~~ 7278022
Initial Pressure: 28 in/Hg
Final Pressure: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 8 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-8

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/24/09	08:27
End:	8/24/09	16:27

Latitude: __ __ . __
Longitude: __ __ . __

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

8/24/09
Canister ID: ~~5019~~ LS ~~3022~~ LS 2742

Flow Controller ID: FC-19

Initial Pressure: 6 in/Hg

Final Pressure 6 in/Hg

* Flow Controller Malfunctioned

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 9 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-9-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-4

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/24/09	08:19
Longitude: ___ ___ ___		**End:**	8/24/09	16:19

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Canister ID. 7443

Flow Controller ID: 159291 7335604

Initial Pressure: 28 in/Hg

Final Pressure: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 10 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-10-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SG-2

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	08:15
Longitude: ___ ___ ___	**End:**	8/24/09	16:15

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Canister ID: 3009

Flow Controller ID: 126465 7266995

Initial Pressure: 27 in/Hg

Final Pressure: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 11 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-11-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-7 - Quonset shop SE corner

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

Latitude: __ __ __
Longitude: __ __ __

	Date	Time(24 hr)
Sample Collection: Start:	8 24 09	08:00
End:	8 24 09	16:06

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 68"

Canister ID: 4568

Flow Controller ID: FC-23

Initial Press: 30 in/Hg

Final Press: 3.5 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 12 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-12-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-8 - Quonset shop north wall center

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	08:03
Longitude: ___ ___ ___	**End:**	8/24/09	16:12

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 68"

Canister ID: 4562

Flow Controller ID: FC-28 ? (Not clear if Labeled)

Initial Press: 27.5 in/Hg

Final Press: 4 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 13 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-13-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-9 - Quonset Shop ~~NW~~ SW corner 8/24

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	8:01
Longitude: ___ ___ ___	**End:**	8/24/09	16:10

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Intake height: 68"
Canister ID: 3005
Flow Controller ID: FC-34
Initial Press: 28 in/Hg
Final Press: 2 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 14 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-14-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-10- Quonset Shop NW corner

External Sample Number: ______

Expected Conc:	(or Circle One: Low Medium High)		**Date**	**Time(24 hr)**
Latitude: ___ ___ ___		**Sample Collection: Start:**	82409	08:02
Longitude: ___ ___ ___		**End:**	82409	16:11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Intake height: 68"
Canister ID: 02965
Flow Controller ID: Not labeled

Initial Press: 29 in/Hg
Final Press: 2 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 15 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-15-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-3 - office Area west wall

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	82409	0759
Longitude: ___ ___ ___	**End:**	82409	16:01

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Intake height: ~~49"~~ 65" 8/21/09
Canister ID: 4565
Flow Controller ID: FC-46
Initial Press: 28 in/Hg
Final Press: Φ in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** ~~23~~ 15 8/21 **QC Code:** FD **Matrix:** Air **Tag ID:** 4521-~~23~~ 15-FD 8/21

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-3 Field Duplicate

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___	Sample Collection: Start:	8/24/09	07:59
Longitude: ___	End:	8/24/09	16:01

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

* Field Duplicate of Sample 4521-15
Intake height: 65"
Canister ID: 03025
Flow Controller ID: FC-16
Initial Press: 28 in/Hg
Final Press: 0 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 16 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-16-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-2 - South room on coffeemaker table

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 082409 07 59
Longitude: __ __ __ **End:** 82409 16:01

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 50"

Canister ID: 02978

Flow Controller ID: FC-20

Initial Press: 30 in/Hg

Final Press: 1.5 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 17 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-17-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-1 - ofc breakarea table (NE corner)

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8 24 09	0825 ~~0800~~ 8/24
Longitude: ___ ___ ___ **End:**	8 24 09	16:03

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height:

Canister ID: ~~2742~~ JG 8/24 01932

Flow Controller ID: Not labeled

Initial Press: NA*

Final Press: NA*

* Regulator does not appear to be Functioning properly or gauge not functioning. Valve left open for sampling period, and will submit for analysis in case it did draw air.

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 18 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-18-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-H-Ofc backshop SE corner on Counter

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	08/24/09	07:58
Longitude: ___ ___ ___ **End:**	8/24/09	15:58

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:
(N/A)

Intake height: 51"

Canister ID: 04001

Flow Controller ID: FC-5

Initial Press: 26 in/Hg

Final Press: Ø in/Hg

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 19 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-19-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-5: North wall ~~center~~ NE corner ofc backshop on counter 8/24

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/24/09	07:55
Longitude: ___ ___ ___ **End:**	8/24/09	~~15:5~~ 8/24 15:59

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 59"

Canister ID: 01898

Flow Controller ID: Not labeled

Intial Press: 29 in/Hg

Final Press: 2.5 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 20 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-20-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: IA-6 - ofc back shop in cage

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ . __	**Sample Collection: Start:**	82409	0757
Longitude: __ __ __	**End:**	82409	16:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 55"

Canister ID: 01944

Flow Controller ID: FC-10

Initial Press: 30 in/Hg

Final Press: 4 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 21 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-21-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: Outdoor air SE side of office 11ft from building

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ . ___ **Sample Collection: Start:** 8 24 09 08:05
Longitude: ___ ___ ___ **End:** 8 24 09 16:15

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 53"

Canister ID:

Flow Controller ID:

Initial Press: 29 in/Hg

Final Press: 5 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4521 **Sample Number:** 22 **QC Code:** __ **Matrix:** Air **Tag ID:** 4521-22-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: Outdoor Air - southwest corner quonset 17' from building

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	08 24 09	08:10
Longitude: ___ ___ ___	**End:**	8 24 09	16:17

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 6 Liter Canister	None	60 Days	1 VOCs in Air at Ambient Levels by GC/MS

Sample Comments:

(N/A)

Intake height: 57.5"

Canister ID: 2986

Flow Controller ID: FC-52

Initial Press: 30 in/Hg

Final Press: 0.5 in/Hg

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-1-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 214-218 Feet.

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __.__	**Sample Collection: Start:**	8/23/09	11:55
Longitude: __ __ __	**End:**	~~8/ /09~~	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample method = DPT

Temp(°C) - 26.86

ORP ~~(mg/L)~~ us -66

DO-(mg/L) - 0.22

Conduc (µs/cm²) 579

Turbidity - >1,000

pH - 7.38

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-2-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 204-208

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/23/09	12:40
Longitude: ___ ___ ___	**End:**	__/__/~~09~~	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample Method = DPT
Temp °C - 24.16
Conductivity μS/cm² - 405
DO mg/L - 1.90
pH - 7.22
ORP - -72.1
Turb - >1,000

Extra Volume For MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-3-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~RWTS2~~ TS206 ~~@~~ 194-198 Feet SV

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/23/09	13:20
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample Method = DPT

Temp °C - 24.09

Cond (µS/cm²) - 421

DO (mg/L) - 4.65

pH - 7.17

ORP - 20.5

Turbidity - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** ~~4~~ 3 (FD) **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~4~~ 3-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS206 194-198 Feet

External Sample Number:

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude:	**Sample Collection: Start:**	8/23/09	13:20
Longitude:	**End:**	/ /	:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media = GW
Sample Method = DPT
Temp °C - 24.09
Cond($\mu S/cm^2$) - 421
DO mg/L - 4.65
pH - 7.17
ORP - 20.05
Turbidity - > 1,000

Duplicate Sample of 4522-3

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-5-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2 - 06 184-188 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/23/09 14:25

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample method = PPT

Temp °C - 24.4°C

Conductivity (µS/cm²) - 486

DO (mg/L) - 0.21

pH - 7.38

ORP - -133.1

Turbidity - >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-6-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 174-178

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/23/09	14:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample method = DPT

Temp °C - 19.11

Conductivity (µS/cm²) - 477

DO (mg/L) - 0.08

pH - 7.50

ORP - -191.3

Turb. - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-7-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 ~~151-155~~ 164-168 8/23/09

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/23/09	15:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) media = GW
Sample method = DPT
Temp °C - 19.62
Cond (µS/cm²) - 504
DO (mg/L) - 0.34
pH - 7.56
ORP - -148.6
Turbidity - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-8-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 151-155

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/23/09 ~~16:00~~ 15:55 SH 8/23/09

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Sample Media = GW

Sample Method = DPT

Temp °C - 19.27

Cond (µS/cm²) - 598

DO (mg/L) - 0.19

pH - 7.05

ORP - -109.9

Turbidity - >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-9-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 144-148 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/23/09	16:55
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Media = GW
Sample method = DPT
Temp °C - 26.9
Cond. (µS/cm) - 638
DO (mg/L) - 0.17
pH - 7.13
ORP - -121.4
Turbidity - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-10-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-06 134-138 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	09:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) media = GW

Sampling method = DPT

Temp °C - 25,22

Cond. (μS/cm) - 761

DO (mg/L) - 0,37

pH - 6.77

ORP - -42,3

Turbidity - > 1,003

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-11-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR ~~- OFF-SITE~~ GROUNDWATER **Site ID:** A72Z **Site OU:** 02

8-24-0a

Location Desc: SA ~~A1~~ ~~TS207~~ TS2-07 ~~214-218~~ 213-217

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/25/09	8:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 14.23
Cond (μS/cm²) - 518
DO (mg/L) - 0.16
pH - 7.18
ORP - -73.4
Turbidity - >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

11-FD

ASR Number: 4522 **Sample Number:** ~~12~~ 11 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~12~~

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 - 213-217 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	___ ___ ___	**Sample Collection: Start:**	8/25/09	08:15
Longitude:	___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample method - DPT
Temp °C - 19.23
Cond (µS/cm) - 518
DO (mg/L) - 0.16
pH - 7.18
ORP - -73.5
Turbidity - > 1,000

Field Duplicate Sample

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-13-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 204- 208 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/25/07	8:50
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample - Method - DPT
Temp °C - 18.05
Cond (μS/cm) - 363
DO (mg/L) - 4.80
pH - 7.36
ORP - -73.0
Turbidity - >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-14-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 194-198 feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/25/09	9:15
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C 18.10
Cond (µS/cm) - 459
DO (mg/L) - 0.50
pH - 6.5
ORP - -24.7
Turb - >1,000

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-15-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 184-188 feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/25/04	9:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 18.6
Cond (µS/cm) 495
DO mg/L - 0.23
pH - 6.45
ORP - -56.5
Turb. - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 16 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-16-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 174-178 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/25/09	8:20
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media GW
Sample Method - DPT
Temp °C 19.6
Cond (µS/cm) - 530
DO (mg/L) - 0.86
pH - 7.16
ORP - -78.6
Turbidity - >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 17 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-17-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 164-168 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/25/09	10:45
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media - GW
Sample Method - DPT
Temp °C 19.8
Cond (mS/cm) - 524
DO (mg/L) - 2.0
pH - 6.57
ORP - -41.5
Turbidity - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 18 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-18-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207- 151-155 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/25/09 11:15
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media - GW
Sample Method - DPT
Temp (°C) - 20.67
Cond (mS/cm) - 604
DO mg/L 2.95
pH - 6.30
ORP - -20.3
Turbidity >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 19 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-19-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 144-148

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/25/09	12:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media - GW
Sample Method - DPT
Temp °C - 20.94
Cond (µS/cm) - 630
DO (mg/L) - 1.26
pH 7.17
ORP -89.3
Turbidity - > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 20 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-20-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS207 134-138

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/25/09 13:15

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 29°

Cond (mS/cm) - 681

DO mg/L - 0.35

pH 6.89

ORP -32.6

Turbidity > 1,000

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 21 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-21-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 219-223 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	11:05
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 16.76

Cond (µs/cm) - 458

DO (mg/L) - 1.28

pH - 6.42

ORP - 16.8

Turbid. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 22 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-22-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 209-213 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	11:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 16.91
Cond (µS/cm) - 438
DO mg/L - 0.31
pH - 6.76
ORP - 73.1
Turb. - >1,000

Sample Collected By: JG SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 23 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-23-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 104 199-203

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	9/1/09	12:05
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media - GW
Sample Method - DPT
Temp °C - 17.46
Cond. (µS/cm²) - 533
DO (mg/L) - 0.57
pH - 6.60
ORP - -67.1
Turbidity - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 24 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-24-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 189-193

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/1/09 12:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media - GW
Sample Method - DPT
Temp °C - 17.86
Cond. (μS/cm²) - 572
DO (mg/L) - 0.28
pH - 6.55
ORP - -71.3
Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 25 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-25-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 104 179-183 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	12:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
media-GW
Sample Method - DPT
Temp °C - 18.0
Cond (uS/cm2) - 604
DO (mg/L) - 0.08
pH - 7.11
ORP - -124.2
Turbidity - >1,000

Extra Volume For MS/MSD

Sample Collected By: ~~JG~~ SIT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 26 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-26-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS109 ~~169-173~~ 169-173 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	13:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 18.6
Cond ($\mu S/cm^2$) - 567
DO (mg/L) - 0.24
pH - 7.12
ORP - -82.3
Turbid - > 1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** ~~27~~ 26 (SH) **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~27~~-26-FD (SH)

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 104 169- 173 Feet

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	13:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Media - GW
Sample Method - DPT
Temp °C - 18.6
Cond. (µS/cm2) - 567
DO (mg/L) - 0.24
pH - 7.12
ORP - -82.3
Turbidity - >1,000

Sample Collected By: ~~16~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 28 **QC Code:** ___ **Matrix:** Water **Tag ID:** 4522-28-___

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 - 157-161 Feet

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 4/1/09 13:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 19.13

Cond (µS/cm²) - 539

DO (mg/L) - 0.10

pH - 6.46

ORP - -60.8

Turb. - >1,000

Sample Collected By: ~~JG~~ SJT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 29 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-29-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 148-152

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/1/09 14:10
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Media - GW
Sample Method - DPT
Temp °C - 17.95
Cond μS/cm² - 516
DO mg/L - 0.26
pH - 6.81
ORP - -78.3
Turbidity - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 30 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-30-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 139-143 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/1/09	14:50
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 19.87°
Cond µS/cm² - 553
DO mg/L - 2.68
pH - 6.20
ORP - -26.2
Turbidity - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 31 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-31-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS104 129-133 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/1/09 15:15
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Temp °C - 19.78
Cond µS/cm² - 839
DO mg/L - 2.59
pH - 6.20
ORP - -16.6
Turbidity - >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 32 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-32-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 219 - 223 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/2/09	11:55
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 20.57
Cond µS/cm2 - 370
DO mg/L - 0.63
pH - 6.64
ORP - -37.8
Turbidity - >1,000

Sample Collected By: ~~JG~~ Gm

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 33 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-33-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 209 - 213

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/2/09 12:25

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 20.13

Cond $\mu S/cm^2$ - 299

DO mg/L - 0.50

pH - 5.72

ORP - -12.5

Turbidity - >1,000

Sample Collected By: JG / GH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 34 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-34-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 103 199-203

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/2/09 13:05

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 17.71
Cond µS/cm² - 366
DO mg/L - 1.44
pH - 6.54
ORP - -38.9
Turbidity - >1,000

Sample Collected By: JG/SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 35 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-35-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103- 189-193

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: __ __ __ **Sample Collection: Start:** 9/2/09 13:30
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Temp °C - 17.58
Cond µS/cm² - 334
DO mg/L - 0.08
pH - 6.31
ORP - -69.8
Turbidity - 71,000

Sample Collected By: ~~18~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 36 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-36-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 179 - 183

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	Sample Collection: Start:	9/2/09	14:00
Longitude: __ __ __	End:	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 17.73
Cond µS/cm² - 353
DO mg/L - 0.04
pH - 6.98
ORP - -111.4
Turbidity - 71,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

36-FD

ASR Number: 4522 **Sample Number:** ~~37~~ 36 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~37~~

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 179-183

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/2/09 14:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample method - DPT
Temp °C - 17.37
Cond µS/cm² - 353
DO mg/L - 0.04
pH - 6.98
ORP - -111.4
Turbidity - >1,000

Sample Collected By: ~~JG~~ SK

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 38 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-38-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 169-173

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	9/2/09	14:20
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 17.85
Cond µS/cm2 - 450
DO mg/L - 0.20
pH - 7.15
ORP - -106.7
Turbidity - >1,000

Extra Volume
For MS/MSD

Sample Collected By: JG / SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 39 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-39-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 159-163

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	9/2/09	14:50
End:	__/__/__	__:__

Latitude: __ __ __
Longitude: __ __ __

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 18.10

Cond µS/cm2 - 567

DO mg/L - 0.16

pH - 6.76

ORP - -77.9

Turbid. - >1,000

Sample Collected By: JG/SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 40 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-40-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 143-147

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time (24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/2/09 ~~13:~~ 15:20
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 18.92
Cond µS/cm² - 583
DO mg/L - 0.35
pH - 6.77
ORP - 94.6
Turb - >1,000

Sample Collected By: JG/SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 41 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-41-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 134-138 feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/2/09 15:45
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 16.94
Cond µS/cm² - 663
DO mg/L - 0.13
pH - 6.98
ORP - -85.5
Turb. - >1,000

Sample Collected By: ~~JB~~ SA

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 42 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-42-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS103 124-128 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/2/09	16:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 16.00
Cond µS/cm - 896
DO mg/L - 0.11
pH - 6.73
ORP - -65.1
Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 43 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-43-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 181-185

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	9/3/09	15:20
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 23.32

Cond µS/cm2 - 489

DO mg/L - 2.60

pH - 6.52

ORP - -24.1

Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** ~~44~~ 43 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~44~~ 43-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 181-185

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/3/09	15:20
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - OPT

Temp °C - 23.32

Cond µS/cm - 484

DO mg/L - 2.60

pH - 6.52

ORP - -24.1

Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 45 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-45-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 169-173

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/3/09 15:45
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Temp °C - 19.67
Cond µS/cm2 - 436
DO mg/L - 4.32
pH - 6.13
ORP - 18.9
Turb. - > 1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 46 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-46-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 159-163 feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	9/3/09	16:10
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 18.93

Cond µS/cm² - 562

DO mg/L - 0.40

pH - 5.93

ORP - -24.8

Turb. - >1,000

Sample Collected By: JG SG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 47 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-47-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 143-147 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/3/09	16:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample method - DPT

Temp °C - 19.39

Cond µS/cm² - 505

DO mg/L - 0.74

pH - 6.87

ORP - -60.9

Turb. - > 1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 48 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-48-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 134-138

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/3/09 16:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 19.26

Cond. µS/cm2 - 765

DO mg/L - 4.86

pH - 6.90

ORP - -37.8

Turbidity - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 49 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-49-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS102 124-128

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/3/09 17:25
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Temp °C - 22.25
Cond (µS/cm²) - 878
DO mg/L - 1.95
pH - 6.60
ORP - -8.7
Turb. - >1,000

Sample Collected By: JG GH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 50 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-50-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS203 178-182 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	09/4/09	14:40
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 20.95

Cond μS/cm² - 624

DO mg/L - 2.11

pH - 5.84

ORP - 90.3

Turb. - 71,000

Sample Collected By: ~~JG~~ SG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 51 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-51-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS203 169-173

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/4/09 15:05
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Temp °C - 20.66
Cond. µS/cm² - 576
DO mg/L - 0.97
pH - 6.72
ORP - -18.4
Turb. - >1,000

Sample Collected By: JG/SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 52 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-52-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS203 159-173

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ **Start:**	9/4/09	15:35
Longitude: ___ **End:**	__/__/__	__:__

Changed to 159-163

Laboratory Analyses

Container	P…	…sis
4 - 40mL VOA vial	4…	… in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4… th…	…and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method -
Temp. °C - 18.88
Cond $\mu S/cm^2$ - 600
DO mg/L - 1.49
pH - 5.89
ORP - -20.1
Turb. - >1,000

Sample Collected By: ~~JG~~ SJT

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** ~~53~~ 52 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~53~~ 52-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS203 159-173

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	9/4/09	15:35
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp. °C - 18.88
Cond. µS/cm² - 600
DO mg/L - 1.49
pH - 5.89
ORP - 20.1
Turb. - >1,000

Sample Collected By: JG/JCL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 54 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-54-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS203 - 147-151 feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/4/09	17:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 18.05
Cond. µS/cm - 602
DO mg/L - 0.88
pH - 6.63
ORP - -69.4
Turb. - >1,000

Sample Collected By: JG SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 55 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-55-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS203 130-134

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/5/09	8:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 15.73
Cond µS/cm2 - 800
DO mg/L - 0.77
pH - 5.67
ORP - 164.1
Turb. - 71,000

Sample Collected By: JG SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 56 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-56-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

SH

Location Desc: ~~TS203~~ TS204 184-188

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/5/09	16:10
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 26

Cond µS/cm² - 556

DO mg/L - 0.92

pH - 5.64

ORP - 21.9

Turb. - 71,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 57 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-57-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 219-223 Feet

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	14:10
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Temp °C - 26.98
Cond µS/cm² - 459
DO mg/L - 2.39
pH - 6.55
ORP - 104.0
Turb. - >1,000

Sample Collected By: JG
SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 58 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-58-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 209-213 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	14:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sample Method - DPT
Temp °C - 26.11
Cond µS/cm² - 393
DO mg/L - 2.94
pH - 5.86
ORP - ~~55.3~~ 33.4
Turb. - >1,000

Extra Volume for MS/MSD

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 59 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-59-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 199-203

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	15:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 22.84

Cond µS/cm² - 428

DO mg/L - 1.67

pH - 5.37

ORP - 52.2

Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 60 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-60-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 189-193

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/9	15:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 22.01

Cond µS/cm² - 446

DO mg/L - 0.38

pH - 5.92

ORP - -10.9

Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 61 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-61-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 179-183

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	09/6/09	16:00
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW

Sample Method - DPT

Temp °C - 20.22

Cond µS/cm - 558

DO mg/L - 0.30

pH - 6.14

ORP - -35.2

Turb. >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 62 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-62-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 169-173 Feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	9/6/09	16:20
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 21.23

Cond μS/cm² - 532

DO mg/L - 0.08

pH - 6.70

ORP - -111.8

Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** ~~63~~ 62 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~63~~ 62-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204- 169-173 feet

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

Latitude: ___ ___ ___

Longitude: ___ ___ ___

	Date	Time(24 hr)
Sample Collection: Start:	09/6/09	16:26
End:	_/_/_	_:_

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 21.23

Cond µS/cm² - 532

DO mg/L - 0.08

pH - 6.70

ORP - -111.8

Turb. - >1,000

Sample Collected By: ~~JG~~ SG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 64 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-64-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 204 159-163 Feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/6/09 __:__

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 19.69

Cond µS/cm - 560

DO mg/L - 0.15

pH - 6.78

ORP - 90.6

Turb. - >1,000

Sample Collected By: ~~JG~~ SB

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 65 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-65-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS204 147 -151 feet

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/6/09 17:05

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 19.02

Cond µS/cm - 584

DO mg/L - 0.10

pH - 6.37

ORP - -76.0

Turb. - >1,000

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 66 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-66-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 204 134-138 Feet

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/6/09	17:40
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 24.4

Cond µS/cm² - 626

pH - ~~6.95~~ 6.95

ORP - -126.7

Turb. - > 1,000

DO mg/L 0.24

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 67 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-67-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS204~~ SH 9/6/09 ~~121-125~~ SH 9/6/09
TS1-01 / 178-182 ft bgs
External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	9/7/09	14:00
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW

Sample Method - DPT

Temp °C - 22.49

Cond µS/cm² - 669

DO mg/L - 2.63

pH - 5.91

ORP - 152.5

Turb. > 999 (NTU)

Sample Collected By: SH 9/7/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 68 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-68-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS101/168-172 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/7/09	14:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 19.80

Cond µS/cm² - 601

DO mg/L - 5.31

pH - 5.67

ORP - 67.3

Turb. > 999

Sample Collected By: ~~JS~~ BK 9/7/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 69 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-69-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS101/158-162 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/7/09 15:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW

Sample Method - DPT

Temp °C - 21.32

Cond µS/cm² - 572

DO mg/L - 0.50

PH - 7.02

ORP = 7.1

Turb. ≥ 999

Sample Collected By: ~~JG~~ BK 9/7/07

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

AS 9/7/09

ASR Number: 4522 **Sample Number:** 70 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~70~~-69 FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4522-69

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/7/09	15:00
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 21.32

Cond µS/cm² - 572

DO mg/L - 0.50

pH - 7.02

ORP - 7.1

Turb. > 999

Sample Collected By: ~~JG~~ BK 9/7/07

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 71 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-71-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS101 / 143-147

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/7/09	15:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample method - DPT

Temp °C - 21.40

Cond µS/cm² - 611

DO mg/L - 0.68

pH - 6.81

ORP - -29.7

Turb. >999

Sample Collected By: ~~JG~~ BR 9/7/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 72 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-72-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS101 / 133-137 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/7/09	16:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW

Sample Method - DPT

Temp °C - 20.5

Cond µS/cm² - 668

DO mg/L - 1.56

pH - 6.92

ORP - -19.0

Turb. > 999 (NTU)

Sample Collected By: ~~JG~~ BK 9/7/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 100 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-100-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 304 : ~~208~~ 209-212 ft bgs KLB 9/1/09

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	10:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Temp (°C) = 15.44
cond (μS/cm) = 381
DO = 2.45 mg/L
pH = 6.92
ORP = 68.0
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 101 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-101-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TSB-04 199-263 FT BGS

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/1/09	11:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 14.91
Cond (NS/cm) = 337
DO (mg/L) = 5.94
pH = 7.23
ORP = -328
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 102 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-102-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS304 ~~189-193 ft bgs~~ AG 9/1/09 184-188 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	9/1/09	13:20
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Not enough volume for measuring water quality parameters

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 103 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-103-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS3 ~~04~~ /174-178 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___		**Sample Collection: Start:**	9/1/09	14:20
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 15.78
Cond (NS/cm) = 626
DO (mg/L) = 4.25
pH = 6.96
ORP = -70.8
Turbidity > 999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

103 Ab 9/1/09

ASR Number: 4522 **Sample Number:** 104 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-~~104~~-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4522-103

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/1/09 14:20
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 15.78
cond (NS/cm) = 626
DO (mg/L) = 4.25
pH = 6.96
ORP = -70.8
Turbidity > 999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 105 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-105-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS304/164-168 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___ ___ ___ Sample Collection: Start: 9/1/09 14:55

Longitude: ___ ___ ___ End: __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 16.41
Cond (uS/cm) = 649
DO (mg/L) = 0.44
pH = 7.39
ORP = -151.9
Turb > 999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 106 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-106-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS304 / 154-158 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/1/09	15:50
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.35
cond (µS/cm) = 855
DO (mg/L) = 1.96
pH = 7.13
ORP = -112.3 mV
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 107 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-107-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS304 / 142-146 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	Sample Collection: Start:	9/1/09	16:20
Longitude: __ __ __	End:	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Extra volume for MS/MSD

Temp (°C) = 17.69
cond (NS/cm) = 842
DO (mg/L) = 0.26
pH = 7.34
ORP = -163 mv
Turbidity > 999 NTU

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 108 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-108-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS304 / 134-138 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/1/09 17:00

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.11
Cond (NS/cm) = 1.004
DO (mg/L) = 0.06
pH = 7.21
ORP = 144.8 mV
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/1/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 109 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-109-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS304/124-128 ft bgs~~ AG TS303/204-208 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	9/2/09 AG 9/2/09	13:20
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 19.32 °C
COND = 370 µS/cm
DO = 2.31 mg/L
pH = 6.98
ORP = 66.4 mV
TURB > 999 NTU

Sample Collected By: ~~JG~~ BK 9/2/09 AG 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 110 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-110-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303 / 194-198 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/2/09	13:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 17.87°C
COND = 320 µS/cm
DO = 1.72 mg/L
pH = 7.28
ORP = -72.2 mV
TURB > 999 NTU

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 111 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-111-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303/184-188 ft bgs

External Sample Number: ______

Expected Conc:	(or Circle One: Low Medium High)	Date	Time(24 hr)
Latitude: ___ ___ ___	Sample Collection: Start:	9/2/09	14:15
Longitude: ___ ___ ___	End:	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 17.93°C
COND = 344 µS/cm
DO = .426 Mg/L
pH = 7.32
ORP = -60.0 mV
TURB > 999 NTU

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 112 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-112-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303/174-178 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/2/09 14:50
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 16.95
cond (NS/cm) = 475
DO (mg/L) = 0.84
pH = 7.29
ORP = -120.7 mV
Turbidity >999

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 113 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-113-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303/164-168 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/2/09	15:25
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.5
Cond (NS/cm) = 552
DO (mg/L) = 0.93
pH = 7.29
ORP (mV) = -129.9
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 114 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-114-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303/154-158

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	9/2/09	15:55
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp(°C) = 10.76
cond(NS/cm) = 661
DO(Mg/L) = 5.96
pH = 7.31
ORP(mV) = -132.8
Turbidity(NTU) >999

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 115 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-115-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303/142-146

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	9/2/09	16:15
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 16.68
Cond (NS/cm) = 70.7
DO (mg/L) = 0.44
pH = 7.40
ORP (mV) = -144.9
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

4522 **Sample Number:** 116 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-116-__

BZA72Z02 **Project Manager:** Brian Zurbuchen
Garvey Elevator - RI/FS sampling
Hastings **State:** Nebraska
Superfund
GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

TS303/134-138 ft bgs

External Sample Number: ______

(or Circle One: Low Medium High) **Date** **Time(24 hr)**

___ ___ ___ **Sample Collection: Start:** 9/2/09 16:30

___ ___ ___ **End:** __/__/__ __:__

alyses:

Preservative	Holding Time		Analysis
4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample ...nts:
(N/A)

TEMP = 16.67 °C
COND = 971 µS/cm
DO = 0.17 mg/L
pH = 7.23
ORP = 140.9 mV
TURB > 999 NTU

By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 117 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-117-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS303/124-128 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/2/09	17:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

BK 9/2/09
Temp(°C) = ~~16.89~~ 17.25
Cond (uS/cm) = 984
DO (mg/L) = 0.04
pH = 7.32
ORP (mV) = -16.93
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/2/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 118 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-118-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/214-218

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/3/09	14:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 19.43
Cond (NS/cm) = 347
DO (mg/L) = 0.66
pH = 6.98
ORP (mV) = 13.7
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/3/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 119 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-119-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/204-208 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/3/09	15:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 21.12 °C
pH : 7.35
COND = 308 µS/cm
ORP = -89.8 mV
TURB = >999 NTU
DO = 1.42 mg/L

Sample Collected By: ~~JG~~ BK 9/3/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 120 **QC Code:** FD **Matrix:** Water **Tag ID:** 4522-~~120~~ 119 FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: DUPLICATE OF 4522-119

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/3/09	15:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

9/3/09

Container	Preservative	Holding Time	Analysis
8 ~~4~~ - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
4 ~~2~~ - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

9/3/09

Sample Comments:

(N/A)

TEMP = 21.12 °C
pH = 7.35
COND = 308 NS/CM
ORP = -89.8 mV
TURB = >999 NTU
DO = 1.42 mg/L

Sample Collected By: JG 9/3/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 121 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-121-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/ ~~■~~ Af 9/3/09 194-198 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/3/09 16:10

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.99
Cond (μS/cm) = 307
DO (mg/L) = 1.10
pH = 7.25
ORP = -99.2 mV
Turbidity > 999 NTU

Sample Collected By: ~~JG~~ BK 9/3/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 122 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-122-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/184-188 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	9/3/09	16:55
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.39
cond (mS/cm) = 421
DO (mg/L) = 4.77
pH = 7.26
ORP (mV) = -78.5
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/3/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 123 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-123-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/174-178

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/3/09	17:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.48
Cond (uS/cm) = 311
DO (mg/L) = 0.36
pH = 7.26
ORP (mV) = -109.3
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/3/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 124 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-124-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/164-168 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/3/09 17:35
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 17.83
Cond (μS/cm) = 345
DO (mg/L) = 0.08
pH = 7.52
ORP (mV) = -153.4
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/3/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 125 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-125-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301 / 154-158 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/4/09 8:25

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 15.07 °C
COND = 382 µS/cm
DO = 45 mg/L
pH = 6.68
ORP = 52.0 mV

Sample Collected By: ~~JG~~ BK 9/4/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 126 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-126-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/ ~~142-146 ft bgs~~ AG 9/4/09 139-142 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/4/09	11:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
12 ~~4~~ - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
6 ~~2~~ - 40mL VOA vial RK 9-4-09	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments: EXTRA VOLUME FOR MS/MSD.
(N/A)

TEMP = 16.74°C
COND = 521 µS/cm
DO = 1.14 mg/L
pH = 7.08
ORP = 115.2 mV
TURB = >999

Sample Collected By: ~~JG~~ BK 9/4/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 127 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-127-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/129-133 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/4/09 12:10

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 10.78
cond (NS/cm) = 670
DO (mg/L) = 0.07
pH = 7.3
ORP (mV) = -134.9
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/4/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 128 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-128-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS301/119-123 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/4/09	12:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 15.28
cond (NS/cm) = 1547
DO (mg/L) = 0.05
pH = 7.34
ORP (mV) = -151.6
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/4/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 129 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-129-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS305/198-202 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	9/6/09	12:30
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Temp(°C) = 21.69
Cond(NS/cm) = 450
DO (mg/L) = 0.44
pH = 7.10
ORP (mV) = 72.3
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 130 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-130-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS301~~ / 188-192 ft bgs
TS3-05
RK 9-6-09
External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	13:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Temp(°C) = 20.59
Cond(NS/cm) = 318
DO(mg/L) = 0.90
pH = 7.66
ORP(mV) = -127.8
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 131 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-131-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS301~~/178-182 ft bgs
TS3-05
KK 9-6-09
External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	**Time(24 hr)**
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	13:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 20.60
Cond (NS/cm) = 333
DO (mg/L) = 10.41
pH = 7.41
ORP (mV) = -98.7
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 132 **QC Code:** __ **Matrix:** Water **Tag ID:** ~~4522-132~~ 131 FD 9/6/09

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: duplicate of 4522-131

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	9/6/09	13:40
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Temp (°C) = 20.60
Cond (NS/cm) = 333
DO (mg/L) = 10.41
pH = 7.41
ORP (mV) = -98.7
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 133 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-133-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS301~~ / 168-172 ft bgs
TS3-05
RK 9-6-09

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	9/6/09	16:00
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 20.23
COND (uS/cm) = 471
DO = 0.28 mg/L
pH = 7.35
ORP = 144 mV
Turb = 999 NTU

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 134 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-134-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS301~~ /158-162 ft bgs
TS3-05
RK 9-6-09

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	16:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp(°C) = 23.15
Cond (mS/cm) = 0.592
DO (mg/L) = 1.41
ORP (mV) = -21.2
pH = 7.28
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 135 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-135-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS305/142-146 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	17:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp (°C) = 18.31
Cond (uS/cm) = 524
DO (mg/L) = 5.36
pH = 7.29
ORP (mV) = -65.5
Turbidity (NTU) > 999

Sample Collected By: ~~JS~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 136 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-136-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS305/134-138 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	9/6/09	17:50
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp(°C) = 19.10
Cond(mS/cm) = 581
DO(mg/L) = 2.47
pH = 7.41
ORP(mV) = -80.2
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 137 **QC Code:** __ **Matrix:** Water **Tag ID:** 4522-137-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS305/ 124-128 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/6/09	18:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Temp (°C) = 19.32
Cond (ms/cm) = 669
DO (mg/L) = 0.27
pH = 7.26
ORP (mV) = -135.8
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 9/6/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 231 **QC Code:** FB **Matrix:** Water **Tag ID:** 4522-231-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample 1

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/23/09 10:20
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Trip Blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 232 **QC Code:** FB **Matrix:** Water **Tag ID:** 4522-232-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample 2

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/1/09 14:45
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)
Trip Blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 233 **QC Code:** FB **Matrix:** Water **Tag ID:** 4522-233-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample 3

External Sample Number: Trip Blank

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 9/2/09 11:45

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Trip Blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 234 **QC Code:** FB **Matrix:** Water **Tag ID:** 4522-234-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample 4

External Sample Number: Trip Blank

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	9/30/09	13:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) Trip Blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 235 **QC Code:** FB **Matrix:** Water **Tag ID:** 4522-235-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample 5

External Sample Number: Trip Blank

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/4/05 08:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

~~(N/A)~~ Trip Blank

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4522 **Sample Number:** 236 **QC Code:** FB **Matrix:** Water **Tag ID:** 4522-236-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample 6

External Sample Number: Trip Blank

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 9/5/09 09:35

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

~~(N/A)~~ Trip Blank

Sample Collected By: ~~JG~~ SH

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-1-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS1-05 @ 190

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/19/09	18:00
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media =
Sample method =

Temp °C = 22.28
Cond uS/cm = 987
DO mg/L = 0.49
pH = 6.37
ORP = 16.8
Turb NTU = >1000 NTU

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-2-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TSS-01 @ 180'

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/28/09	09:30
Longitude: ___ ___ ___		**End:**	__/__/__	09:32

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample method = DPT
Temp °C = 22.87
Cond uS/cm = 854
DO mg/L = 1.71
pH = 7.16
ORP = -97.2
Turb NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-3-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS1-05 at 170-174 ft

External Sample Number: ____

Expected Conc: (or Circle One) Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/20/09	11:00
Longitude: __ __ __	**End:**	8/20/09	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample method = PPT
Temp °C = 28.18
cond uS/cm = 752
DO mg/L = 0.38
pH = 8.36
ORP = -185.3
Turbid NTU = >1000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-4-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TSI-05 @ 160-164'

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/20/09	13:30
Longitude: ___ ___ ___	**End:**	8/20/09	13:31

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media = GW
Sample Method = DPT
Temp °C = 28.60
Cond uS/cm = 784
DO mg/L = ~~1.~~ 1.65
pH = 8.10
ORP = 77.5
TURB NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-5-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 1-05 @ 151-155 feet

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	8/20/09	16:40
End:	8/20/09	16:47

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample method = DPT

Temp °C = 23.08

Cond uS/cm = 555

DO mg/L = 1.44

pH = 8.17

ORP = 39.0

turb NTU = >1,000

Extra volume for MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-6-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TSI-05 @ 140 feet

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/21/09	08:30
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample method = DPT

Temp °C = 16.6

Cond uS/cm = 658

DO mg/L = 5.85

pH = 7.63

ORP = 77

turb ntu = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 4823 ~~7~~ 8 609 **QC Code:** FD **Matrix:** Water **Tag ID:** 4523-~~7~~-6-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS1-05 @ 140 Feet

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/21/09	08:30
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample method = DPT

Temp °C = 16.16

Cond uS/cm = 658

DO mg/L = 5.85

pH = 7.63

ORP = 77

Turb NTU = >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-8-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS1-05 @ 130-134 Feet

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: __ __ __		
Sample Collection: Start:	8/21/09	09:00
Longitude: __ __ __ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample method = DPT
Temp = °C = 17.74
Cond uS/cm = 482
DO mg/L = 1.71
PH = 7.88
ORP = -83.0
Turb NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-9-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-02 214-218 ft.

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/22/09 08:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media = GW

Sample method = DPT

Temp °C = 14.42

Cond us/cm = 450

DO mg/L = 0.35

pH = 7.69

ORP = -122.2

turb NTU = >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-10-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-02 205-209'

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/22/09 08:35

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample Method = DPT
Temp °C = 15.92
Cond uS/cm = 485
DO mg/L = 4.73
PH = 7.02
ORP = -18.5
Turb NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-11-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-02 195-199

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/22/09	9:10
Longitude: ___ ___ ___	**End:**	8/22/09	9:12

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample Method = DPT
Temp °C = 19.52
Cond uS/cm = 549
DO mg/L = 1.21
PH = 7.17
ORP = -77.7
Turb NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** ~~12~~ 11 8/25/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4523-~~12~~ 11-FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER (GW) **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS-202~~ TSL-02 195-199

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/22/09	9:10
Longitude: ___ ___ ___	**End:**	8/22/09	9:12

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample method = DPT
temp °C = 19.52
Cond uS/cm = 549
DO mg/L = 1.21
PH = 7.17
ORP = -77.7
turb NTU = >1,000

Field Duplicate of
4523-11

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-13-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-02 185-189

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/22/09	9:40
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample Method = DPT
Temp °C = 18.43
Cond uS/cm = 559
DO mg/L = 1.32
PH = 7.02
ORP = -74.5
Turb NTU = >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-14-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS202 175-179'

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/22/09	10:20
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample Method = DPT

temp °C = 19.47

Cond uS/cm = 537

DO mg/L = 0.35

pH = 7.04

ORP = -96.8

turb NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-15-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-02 165-169'

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

Latitude: __ __ __ **Sample Collection: Start:** Date 8/22/04 Time(24 hr) 10:40

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample Method = PPT
temp °C = 21.41
cond uS/cm = 504
DO mg/L = 0.19
pH = 7.12
ORP = -120.4
turb ntu = >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 16 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-16-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 2 - 02 155 - 159

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/22/09	11:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample Method = DPT
Temp °C = 26.13
Cond uS/cm = 507
DO mg/L = 0.45
PH = 7.09
ORP = -121.9
Turbid NTU = > 1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 17 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-17-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-02 147-151

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/22/09	12:10
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW

Sample Method = DPT

Temp °C = 24.46

Cond uS/cm = 537

DO mg/L = 0.15

pH = 7.11

ORP = 118.5

Turbid NTU = >1,000

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 23 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-23-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS1-05-200

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/19/09	15:48
Longitude: ___ ___ ___		**End:**	8/19/09	16:13

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media = GW
Sample method = DPT

Temp °C = NA
Cond uS/cm = NA
DO mg/L = NA
pH = NA
ORP = NA
Turb NTU = NA

* NA = Not Available.

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 24 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-24-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS3-02 : ~~216 - 220 FT BGS~~ JG 8/20/09 184-188 FT BGS

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/20/09	17:45
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method = DPT
Temp (°C) =
Cond (NM/cm) =
DO (mg/L) =
pH =
ORP =
Turbidity (NTU) =
N/A

Sample Collected By: JG BK 8/20/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 25 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-25-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS302 : 164-168 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ . __ **Sample Collection: Start:** 8/21/09 10:05

Longitude: __ __ . __ **End:** __/__/__ __:__

Laboratory Analyses:

BK 8/21/09 Container	Preservative	Holding Time	Analysis
~~2~~ 1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method = DPT
Temp (°C) =
Cond (NM/cm) =
DO (mg/L) =
pH =
ORP =
Turbidity (NTU) =

N/A

Sample Collected By: ~~JG~~ BK 8/21/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 26 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-26-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS302 : 139-143

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/21/09	12:30
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA via	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA via	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample method = DPT
Temp (°C) = 20.23
Cond (NM/cm) = 8.77
DO (mg/L) = 3.60
PH = N/A
ORP = 87.6
Turbidity (NTU) = >999

Sample Collected By: ~~JB~~ BK 8/21/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 27 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-27-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS302 : 129-133

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/21/09	12:45
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method = DPT
Temp (°C) = 16.63
cond (NS/cm) = 778
DO (mg/L) = 10.91
pH = 7.18
ORP = 23.2
Turbidity (NTU) = >999

Sample Collected By: KG BK 8/21/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 28 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-28-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS302 : 119-123 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/21/09	13:20
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

media = GW
sample method = DPT
temp (°C) = 16.86
cond (mS/cm) = 8.53
DO (mg/L) = 2.26
pH = 7.12
ORP = -0.7
Turbidity (NTU) = >999

Sample Collected By: ~~JG~~ ~~AG~~ BK 8/21/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

28FD AG 8/21/09

ASR Number: 4523 **Sample Number:** ~~29~~ **QC Code:** 28 **Matrix:** Water **Tag ID:** 4523-~~29~~ 28FD

AG 8/21/09

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

AG 8/21/09

Location Desc: duplicate of sample ~~TS302 119-123 ft bgs~~
4523-28

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/21/09 13:20

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

media = GW
sample method = DPT
Temp (°C) = 16.86 °C
cond (µS/cm) = 853
DO (mg/L) = 2.26
pH = 7.12
ORP = -0.7
Turbidity (NTU) = >999

Sample Collected By: ~~JG~~ BK 8/21/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 30 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-30-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02
BK 8-21-09

Location Desc: IRRIGATION WELL ~~WEST OF DANA~~ EAST OF GARVEY ELEVATOR

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/14/09	15:50
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) TOTALIZER – 16472.7 ACRE INCH x .01
950 gpm

Sample Collected By: ~~JG~~ BK 8/21/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 31 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-31-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-05 ; 214 TO 218 FT BGS

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/23/09	9:45
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

media = 6N
sample method = DPT
TEMP = 20.86°C
pH = 8.00
COND. = 248 ms/cm
DO = 7.16 mg/L
ORP = -90.9
TURB = >999

Sample Collected By: ~~JG~~ BK 8/23/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 32 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-32-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS205 : 204-208 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/23/09	10:15
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA via	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

media = GW
sample method = DPT
Temp (°C) = ~~20.08~~ NS 8/23/09 17.96
Cond (uS/cm) = ~~8.00 248 7.56~~ NS 8/23/09 281
DO (mg/L) = ~~248 7.16~~ NS 8/23/09 2.37
pH = ~~8.0~~ NS 8/23/09 7.65
ORP = -96.5
turbidity (NTU) = >999

Sample Collected By: ~~JG~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 33 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-33-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS 205: 194-198 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	8/23/09	11:05
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

media =
sample method =
temp(°C) = 21.24
cond (uS/cm) = 362
DO (mg/L) = 3.35
pH = 7.27
ORP = -68.9
Turbidity (NTU) = >999

Sample Collected By: ~~JG~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 34 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-34-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS205: 184-188

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __. __	**Sample Collection: Start:**	8/23/09	11:45
Longitude: __ __. __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method = DPT
Temp (°C) = 18.69
Cond (mS/cm) = 407
DO (mg/L) = 0.58
PH = 7.76
ORP = -198.7
Turbidity (NTU) > 999

Sample Collected By: ~~JG~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 35 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-35-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS205 : 174-178 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/23/09	14:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 28.0 °C
pH = 7.68
Cond = 472 µS/cm
D.O. = 0.04 mg/L
ORP = -257.1
Turb > 999

Sample Collected By: JG BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 36 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-36-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TSZ-05 ; 164-168 FT

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/23/09 15:20

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
12 ~~1~~ - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
6 ~~2~~ - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A) extra volume for MS/MSD

media = GW
sample method ~~volume~~ (initials) 8/23/09 = DPT
temp (°C) = 21.86
cond (uS/cm) = 414
DO = 0.04
~~OB~~ (initials) 8/23/09 pH = 7.53
ORP = -356
turbidity = >999

Sample Collected By: ~~JG~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 37 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-37-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS205: 151-155 ft bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ .__ **Sample Collection: Start:** 8/23/09 16:00

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Temp = 25.39°c
pH = 7.31
Cond = 704 µs/cm
DO = 1.08
ORP = -179
TURB > 999

Sample Collected By: ~~JS~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 38 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-38-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS205 : 144-148 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/23/09 16:45

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP - 20.15 Z
pH - 7.34
COND. = 793 µS/cm
DO = 3.43 mg/L
ORP = -134.7
TURB > 999

Sample Collected By: ~~JB~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 39 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-39-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS2-05 ; 134-138 FT BGS

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/23/09 17:20

Longitude: ___ ___. ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

TEMP = 19.16°C
pH = 7.18
COND = 853 µS/cm
DO = 0.17 mg/L
ORP = -211
TURB = 499

Sample Collected By: ~~JG~~ BK 8/23/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 40 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-40-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: ~~TS205: 124-128 ft bgs~~ At 8/24/09 TS201: 208-212 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/24/09	15:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

At 8/24/09 Container	Preservative	Holding Time	Analysis
3 ~~4~~ - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments: one VOA preserved with HCl was damaged
(N/A)

Media = GW
sampe method = DPT
Temp(°C) = 28.03
cond(uS/cm) = 573
DO = 0.32
pH = 7.32
ORP = -117.8
Turbidity (NTU) = >999

Sample Collected By: ~~JB~~ BK 8/24/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 41 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-41-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS201: 198-202 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/24/09 16:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method = DPT
Temp (°C) = 23.22
Cond (uS/cm) = 303
DO (mg/L) = 0.16
pH = 7.4
ORP = 159.9
Turbidity (NTU) >999

Sample Collected By: JG BK 8/24/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 42 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-42-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS201 : 188-192 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/24/09 16:45
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media = GW
sample method = DPT
Temp (°C) = 20.97
Cond (uS/cm) = 395
DO (mg/L) = 2.56
pH = 7.08
ORP = -102
Turbidity (NTU) >999

Sample Collected By: JG BK 8/24/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 43 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-43-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS201: 178-182 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __. __	**Sample Collection: Start:**	8/24/09	17:15
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method = DPT
Temp (°C) = 21.19
cond (mS/cm) = 436
DO (mg/L) = 1.26
pH = 7.08
ORP = -128.9
Turbidity (NTU) >999

Sample Collected By: ~~KG~~ BK 8/24/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 44 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-44-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS201 168-172 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ . __	**Sample Collection: Start:**	8/25/09	8:30
Longitude: __ __ . __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
3 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
sample method - DPT
Temp (°C) = 17.09
Cond (uS/cm) = 727
DO (mg/L) = 3.73
pH = 6.86
ORP = -71.2
Turbidity (NTU) >999

Sample Collected By: ~~JG~~ BK 8/25/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 45 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-45-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS201: 158-162 ft bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ . __	**Sample Collection: Start:**	8/25/09	9:30
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media = GW
Sample method = DPT
Temp (°C) = 17.24
Cond (µS/cm) = 738
DO (mg/L) = 2.23
pH = 6.96
ORP = -93.5
Turbidity = >999

Sample Collected By: ~~KG~~ BK 8/25/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 46 **QC Code:** __ **Matrix:** Water **Tag ID:** 4523-46-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS201:148-152 ft bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	NG 8/25/09 8/~~2~~5/09	11:00
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media = GW
Sample method = DPT
Temp (°C) = 19.17
cond (µS/cm) = 760
DO (mg/L) = 2.30
pH = 6.91
ORP = -101.8
Turbidity >999

Sample Collected By: ~~JG~~ BK 8/25/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

46 ~~47~~ 8/25/09

NG 8/25/09

ASR Number: 4523 **Sample Number:** 46 **QC Code:** FD **Matrix:** Water **Tag ID:** 4523-~~47~~-46FD

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4523-46

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/25/09 11:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Temp = 19.17
Cond = 760
DO = 2.30
pH = 6.91
ORP = 101.8
TURB = 29.95

Sample Collected By: ~~JG~~ BK 8/25/09 NG 8/25/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 48 **QC Code:** FB **Matrix:** Water **Tag ID:** 4523-48-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/LDL VOA Trip Blank sample

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 8/18/09 14:39
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Trip blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4523 **Sample Number:** 49 **QC Code:** FB **Matrix:** Water **Tag ID:** 4523-49-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: LDL VOA Trip Blank sample 2

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/22/09	14:35
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Trip blank

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 1 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-1-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-03

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	**Time(24 hr)**
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/19/09	09:45
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC
				1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ BK

8-19-09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 2 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD 06

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/19/09	10:25
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC
				1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ KK

8-19-09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 3 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-3-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-08

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 08/19/09 11:05
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
			1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ B/K

8/19/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 4 **QC Code:** FD **Matrix:** Solid **Tag ID:** 4525-~~4~~-3FD Ab 8/19/0

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-08

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 08/19/09 11:05

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
			1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ Ab 8/19/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 5 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-5-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-09

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/19/09	12:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
			1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ NG 8/19/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 6 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-6-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-10

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/19/08	13:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC
				1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC
0	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JS~~ BK 8/19/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 7 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-7-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-11

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	8/19/09	13:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
12 ~~4~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC
				1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A) EXTRA VOLUME FOR MS/MSD

Sample Collected By: ~~JB~~ BK
8/19/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 8 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-04

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	8/19/09	14:05
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
			1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A) SAMPLE REACTED W/ NaHSO4 W/ VIOLENT FIZZ.

Sample Collected By: ~~JG~~ AG 8/19/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 9 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-9-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-05

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/19/09 14:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
			1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ AG 8/19/09

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 10 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-10-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-01

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 8/19/09 15:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14	Days	1 Pesticides in Soil by GC/EC
				1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ BK

8/19/09

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4525 **Sample Number:** 11 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4525-11-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SD-01

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	**Time(24 hr)**
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	8/19/09	15:15
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, H2O + sodium bisulfate (in 2 vials)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	14 Days	1 Semi-Volatile Organic Compounds in Soil
1 - 8 oz glass	4 Deg C	14 Days	1 Pesticides in Soil by GC/EC
			1 UAA Pesticides in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 Herbicides in Soil by GC/EC
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ AG 8/19/09

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Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-1-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

124 FRM 12/15/09

Location Desc: SB-35: 128.5 ~~126~~ ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: __ __ __ **Sample Collection: Start:**	12/15/09	16:10
Longitude: __ __ __ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW (MS/MSD)
Sample Method - DPT

Turbidity =
Temperature =
Specific Cond. =
pH =
ORP =

Not Available
Limited Volume

Sample Collected By: ~~JG~~ FRM / MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB36: 125-129 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/16/09 10:05
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT

Turbidity = >1000 NTU
Temp = 2.87 °C
Cond. = 0.840 mS/cm
pH = 6.04
ORP = 172.5
D.O. = 27.0 % 3.46 mg/L

Sample Collected By: ~~JG~~ FRW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-3-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB36: 120 to 124 ft. bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	12/16/09	10:35
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT

Turbidity = >1000 NTU
Temp = 6.82 °C
Cond = 0.920 mS/cm
pH = 6.75
ORP = 109.1
D.O. = 281.0 % 27.28 mg/L

Sample Collected By: ~~JG~~ FRW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-4-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 36: 116 to 120 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/16/09	10:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT
Turbidity = >1000 NTU
Temp = 8.65 °C
Cond = 0.909 mS/cm
pH = 6.81
ORP = 59.2
D.O. = 53.1 % 5.24 mg/L

Sample Collected By: ~~JS~~ FRW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-5-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 34: 126 to 130 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/16/09	14:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sample Method - DPT

Turbidity: >1000 NTU
Temp. = 5.15 °C
Cond. = 0.888
pH = 6.39
ORP = 114.0
D.O. = 221.1 % 22.95 mg/L

Sample Collected By: ~~JG~~ FRM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-6-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 33: 146 to 150 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	__ __ __	**Sample Collection: Start:**	12/17/09	09:50
Longitude:	__ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments: Media - GW
(N/A) Sampling Method - DPT

Turbidity = > 1000 NTU
Temp. = 5.26°C
Cond. = 0.691 mS/cm
pH = 6.10
ORP = 147.8
D.O. = 37.7 % 4.59 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** ~~7~~ 6 12/17/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4734-~~7~~ 6-FD 12/17/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB33: 146 to 150 ft bgs

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Sample Collection: Start:	12/17/09	09:51
End:	__/__/__	__:__

Latitude: ___ ___ ___
Longitude: ___ ___ ___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

* Field Duplicate of 4734-6

Turbidity = 71000
Temp. = 5.26°C
Cond. = 0.691 mS/cm
pH = 6.10
ORP = 147.8
D.O. = 37.7 % 4.59 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB-33: 140-144 ft. bgs
12/17/09

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	12/17/09	10:20
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbid = >1000 NTU
Temp. = 5.54 °C
Cond = 0.627 mS/cm
pH = 6.49
ORP = 98.9
D.O. = 99.0% 11.72 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-9-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB33: 134 to 138 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/17/09 10:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments: Media - GW
(N/A) Sampling Method - DPT

Turbidity = >1000 NTU
Temp = 6.17 °C
Cond. = 0.622 mS/cm
pH = 6.52
ORP = 99.6
D.O. = 105.1 % 12.22 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-10-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB33: 128'-132 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	12/17/09	11:10
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 6.91 °C
Cond. = 0.639 mS/cm
pH = 6.67
ORP = 95.4
D.O. = 90.1% 10.31 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-11-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB38: 138-142 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/17/09	15:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT
Turbidity = >1000 NTU
Temp. = 15.49°c
Cond. = 0.796 mS/cm
pH = 6.93
ORP = 93.1
D.O. = 70.7% 6.84 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-12-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB38: 130-134 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/17/09	15:50
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 10.71 °C
Cond. = 0.949 mS/cm
pH = 6.87
ORP = 84.5
D.O. = 87.9 % 9.77 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-13-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB38: 124 - 128 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 12/17/09 16:05
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 11.60°C
Cond. = 0.993 mS/cm
pH = 7.04
ORP = 77.8
D.O. = 62.4% 6.77 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-14-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB39: 136-140 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/18/09 10:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 6.45°C
Cond. = 0.741 mS/cm
pH = 6.26
ORP = 167.7
D.O. = 50.2 % 5.90 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-15-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB37: 125 - 129 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/18/09	13:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = ~~11~~.57 °C
Cond. = 0.811 mS/cm
pH = 6.72
ORP = 149.6
D.O. = 100.2 % 9.33 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 16 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-16-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB37: 120 - 124 ft.

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/18/09 14:20
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp = 11.80 °C
Cond. = 0.813 mS/cm
pH = 6.89
ORP = 42.2
D.O. = 52.6% 5.68 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 17 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-17-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB40: 125-129 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/18/09	16:15
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

PID=0.0 ppm

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 10.07 °C
Cond. = 0.796 mS/cm
pH = 6.68
ORP = 73.9
D.O. = 55.1% 6.20 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** ~~18~~ 17 FD 12/18/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4734-~~18~~-FD 17 12/18/09

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB 40 : 125-129 ft. bgs.

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/18/09 16:16

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

* Field Duplicate of #4734-17

Turbidity = > 1000 NTU
Temp. = 10.07 °C
Cond. = 0.796
pH = 6.68
ORP = 73.9
D.O. = 55.1 % 6.20 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 19 **QC Code:** __ **Matrix:** Water **Tag ID:** 4734-19-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: SB40: 120-124 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/18/09 17:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = > 1000 NTU
Temp. = 9.41
Cond. = 0.803
pH = 6.82
ORP = 58.3
D.O. = 60.3% 6.88 mg/L

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 31 **QC Code:** FB **Matrix:** Water **Tag ID:** 4734-31-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA & EDB/DBCP Trip Blank sample 1

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	~~12/15/09~~ FN 12/15/09	See below ~~12:00~~ FN 12/15/09
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Times ↓Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	15:20 14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	15:12 14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 32 **QC Code:** FB **Matrix:** Water **Tag ID:** 4734-32-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA & EDB/DBCP Trip Blank sample 2

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/17/09 08:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4734 **Sample Number:** 33 **QC Code:** FB **Matrix:** Water **Tag ID:** 4734-33-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA & EDB/DBCP Trip Blank sample 3

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___		**Sample Collection: Start:**	12/18/09	07:30
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-1-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS4-~~02~~ 01; ~~171-175~~ 214-218 ft. bgs.

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	12/21/09	10:45
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW (MS/MSD)
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 11.21°C
Cond. = 0.552 mS/cm
pH = 6.49
ORP = 65.3
D.O. = 30.8% 3.29 mg/L

Sample Collected By: ~~JG~~ FRM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-2-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T54-01 ; 204'-208' ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/20/09 11:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity => 1000 NTU
Temp. = 11.92 °C
Cond. = 0.434 mS/cm
pH = 6.65
ORP = -1.7
D.O. = 21.0% 2.19 mg/L

Sample Collected By: ~~JG~~ FRM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-3-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS4-01 ; 194 - 198 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	12/20/09	11:40
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 11.38 °C
Cond. = 0.466 mS/cm
pH = 6.56
ORP = -29.4
D.O. = 5.9 % 0.59 mg/L

Sample Collected By: ~~JG~~ FAW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-4-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T54-01 : 184-188 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/20/09 12:05
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 8.81 °C
Cond. = 0.547 mS/cm
pH = 6.77
ORP = -67.7
D.O. = 34.2% 3.68 mg/L

Sample Collected By: ~~JC~~ FRM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** ~~5~~ 4 12/20/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4735-~~5~~4-FD 12/21/09

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T54-01: 184-188 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/20/09	12:06
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW — Field Duplicate of #4735-4
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 8.81 °C
Cond. = 0.547 mS/cm
pH = 6.77
ORP = -67.7
D.O. = 34.2% 3.68 mg/L

Sample Collected By: ~~JG~~ FPW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-6-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T54-01: 174-178 ft. bgs.

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	12/20/09	12:50
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 10.44°C
Cond. = 0.749 mS/cm
pH = 6.59
ORP = -57.3
D.O. = 21.7% 2.34 mg/L

Sample Collected By: ~~JG~~ FPM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-7-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS4-01 : 164 - 168 ft. bgs

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 12/20/09 13:20

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14	Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT
Turbidity = >1000 NTU
Temp. = 10.82
Cond. = 0.739 mS/cm
pH = 6.39
ORP = -28.7
D.O. = 6.0% 0.61 mg/L

Sample Collected By: ~~JG~~ FMM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-8-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Rinsate Blank

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/20/09 14:30
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - Water
(Lab supplied DI.)
#4727

Rinsate Blank
from HydroPunch™ Screen

Sample Collected By: ~~JG~~ FMW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-9-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TSH-03: 169 - 173 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/21/09	10:00
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampled Method - DPT

Turbidity = >1000 NTU
Temp. = 12.83 °C
Cond. = 0.733 mS/cm
pH = 7.19
ORP = 135.1
D.O. = 83.4% 8.27 mg/L

Sample Collected By: ~~JG~~ FAM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-10-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T34-03: 159-163 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	12/21/09	10:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 10.24 °C
Cond. = 0.725 mS/cm
pH = 6.77
ORP = 5.1
D.O. = 41.0% 4.38 mg/L

Sample Collected By: ~~JG~~ [illegible]/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** ~~11~~ 10 FM 12/21/09 **QC Code:** FD **Matrix:** Water **Tag ID:** 4735-~~11~~-FD 10 FM 12/21/09

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS4-03 : 159-163 ft. bgs

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/21/09 10:31

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW

Sampling Method - DPT

* Field Duplicate of 4735-10

Turbidity = >1000 NTU
Temp. = 10.24°C
Cond. = 0.725 mS/cm
pH = 6.77
ORP = 5.1
D.O. = 41.0% 4.38 mg/L

Sample Collected By: ~~JG~~ FRM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-12-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T54-03: 149-153 ft. bgs.

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	12/21/09	11:00
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 11.06°C
Cond. = 0.633 mS/cm
pH = 6.58
ORP = 27.3
D.O. = 58.6% 5.51 mg/L

Sample Collected By: ~~JG~~ FRW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-13-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: TS4-03 : 138 - 142 ft. bgs.

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 12/21/09 11:20

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Media - GW
Sampling Method - DPT

Turbidity => 1000 NTU
Temp. : 11.69°C
Cond. : 0.871 mS/cm
pH : 6.65
ORP : 17.1
D.O. : 44.3% 4.67 mg/L

Sample Collected By: ~~JG~~ FRM/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4735-14-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: T34-03 : 124-128 ft. bgs

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/21/09 11:45

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:
(N/A)

Media - GW
Sampling Method - DPT

Turbidity = >1000 NTU
Temp. = 12.20°C
Cond. = 0.895 mS/cm
pH = 6.79
ORP = -2.0
D.O. = 27.6% 2.83 mg/L

Sample Collected By: ~~JG~~ FAW/MDF

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4735 **Sample Number:** 31 **QC Code:** FB **Matrix:** Water **Tag ID:** 4735-31-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: EDB/DBCP & LDL VOA Trip Blank sample 1

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 12/19/09 07:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 - 40mL VOA vial	4 Deg C, sodium thiosulfate	14 Days	1 EDB and DBCP in Drinking Water by GC/ECD

Sample Comments:

(N/A)

Sample Collected By: ~~JG~~ FRM/MDF

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Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4898 **Sample Number:** 1 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4898-1-__

Project ID: BZA72Z02WI **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-46D2: 192'-196'

External Sample Number: MW-46D2: 192'-196'

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	4/16/10	08:40
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 8 oz glass	4 Deg C	28 Days	1 Total Organic Carbon in Soil
1 - 8 oz glass	None	0 Days	1 pH of Soil
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments:

(N/A)

MS/MSD

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4898 **Sample Number:** 2 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4898-2-__

Project ID: BZA72Z02WI **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-41D2:154'-158'

External Sample Number: MW-41D2:154'-158'

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 04/18/10 13:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Soil
1 - 8 oz glass	None	0	Days	1 pH of Soil
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4898 **Sample Number:** 3 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4898-3-__

Project ID: BZA72Z02WI **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-12D: 172'-176'

External Sample Number: MW-12D: 172'-176'

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 5/3/10 10:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Soil
1 - 8 oz glass	None	0	Days	1 pH of Soil
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4898 **Sample Number:** 4 **QC Code:** __ **Matrix:** Solid **Tag ID:** 4898-4-__

Project ID: BZA72Z02WI **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-45D: 156'-160'

External Sample Number: MW-45D: 156'-160'

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 04/30/10 14:15

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Soil
1 - 8 oz glass	None	0	Days	1 pH of Soil
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-1-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW30D

External Sample Number: MW30D

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/16/10	09:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Media = GW
Sample method = Low-flow sampling
Temp °C = 15.62 turb NTU = 5.7
cond uS/cm = 0.651
DO mg/L = 3.34
pH = 7.17
ORP mV = -136

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-2-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW30C

External Sample Number: MW30C

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/16/10	11:03
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-Flow sampling
Temp °C = 16.72
cond uS/cm = 0.617
DO mg/L = 9.90
pH = 7.9
ORP mV = -27
turb NTU = 1.5

Sample Collected By: AR/HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-3-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW30A

External Sample Number: MW30A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/16/10 13:45
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sample method = Low-flow Sampling
temp °C = 15.97
cond us/cm = 0.778
DO mg/L = 0.0
pH = 8.06
ORP mV = -141
turb = NTU = 0.5

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-4-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW8A

External Sample Number: MW8A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/18/10 10:27
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low flow sampling
temp °C = 13.99
turb = 0.0 NTU
cond uS/cm = 1.37
DO mg/L = 9.97
pH = 7.07
ORP mV = 123

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-5-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW3A

External Sample Number: MW3A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/19/10 10:00

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
~~1 - 1 Liter amber glass~~	~~H2SO4 to pH<2, 4 Deg C~~	~~28~~	~~Days~~	~~1 Total Organic Carbon in Water~~ AF 6/19/10
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Media = GW

Sampling method = Low-flow Sampling

temp °C = 14.93
cond us/cm = 0.941
DO mg/L = 10.04
pH = 7.01
ORP mV = 145

turb = 0.0
DO mg/L = 300
Ferrous Iron = 0.03
CO_2 mg/L = 10

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-6-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW3B

External Sample Number: MW35

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/19/10 11:20
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 15.94
cond us/cm = 0.886
DO mg/L = 9.20
pH = 6.99
ORP mV = 135
turb NTU = 0.0

DO mg/L = 2.94
Ferrous Iron mg/L = 0.01
CO_2 mg/L = 10

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-~~7~~ 6 -FD

AF 6/19/10

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW3B

External Sample Number: MW3B

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/19/10 11:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 1 Liter amberglass	H_2SO_4 to pH<2.5, 4 Deg C	28	Days	1 Total Organic Carbon in Water

Sample Comments:

(N/A)

See 4931-6

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW3D

External Sample Number: MW3D

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/19/10	13:20
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 1 Liter amber glass	H_2SO_4 to pH < 2.5	28	Days	1 Total organic carbon in Water

Sample Comments:

(N/A)

media = GW

sampling method = Low-flow sampling

temp °C = 15.67

cond ms/cm = 0.666

DO mg/L = 6.87

pH = 7.13

ORP mV = 121

turb NTU = 0.0

DO ~~mg~~ ug/L = AF 6/14/10

Ferrous Iron mg/L =

CO_2 mg/L

Extra volume on VOCs, MEE and TOC for MS/MSD

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-9-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW3E

External Sample Number: MW3E

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/19/10 15:54

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow
temp °C = 17.43
Cond us/cm = 0.547
DO mg/L = 4.49
pH = 7.94
ORP mV = 65
turb NTU = 0.0

DO = 737 ug/L
Ferrous Iron = 0.11 mg/L
CO_2 = 15 mg/L

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-10-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW31C

External Sample Number: MW31C

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/15/10 __:__

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Media = GW
Sample method = Low-flow sampling
Temp°C = 15.05
cond uS/cm = 0.381
DO mg/L = 6.65
pH = 7.10
ORP mV = 19
turbidity NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-11-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW31A

External Sample Number: MW31A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/15/10 17:47

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sample method = Low-flow sampling
Temp °C = 16.67
cond us/cm = 0.893
DO mg/L = 0.0
pH = 6.94
ORP mV = -289
turbidity NTU = 3.3

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-12-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW30E

External Sample Number: MW30E

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/16/10 08:32
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Media = GW
sample method: Low-flow sampling
Temp °C = 14.67
cond uS/cm = ~~0.384~~ AF 6/16/10 0.587
DO mg/L = 7.84
pH = 7.48
ORP mV = -92
turb NTU = 0.2

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-13-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW20D

External Sample Number: MW20D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/16/10 16:55
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-14-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW20C

External Sample Number: MW20C

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/16/10	17:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 17.99
cond us/cm = 0.597
DO mg/L = 0.0
pH = 7.06
ORP mV = -249
turb = 6.5 NTU

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-15-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW20E

External Sample Number: MW20E

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/16/10	18:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low-flow sampling
temp °C = 16.62
cond us/cm = 0.555
DO mg/L = 6.04
pH = 7.95
ORP mV = 0
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 16 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-16-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW19C

External Sample Number: MW19C

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___		
Longitude: ___ ___ ___		
Sample Collection: Start:	06/17/10	08:27
End:	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sampling method = low-flow sampling
Temp °C = 16.19
cond us/cm = 0.738
DO mg/L = 7.86
pH = 6.89
ORP mV = 32
turb NTU = 0.0

Extra volume collected for MS/MSD

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 17 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-17-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW19A

External Sample Number: MW19A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 06/17/10 09:16
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 16.84
cond mS/cm = 1.01
DO mg/L = 4.49
pH = 7.11
ORP mV = 34
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 18 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-18-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW20A

External Sample Number: MW20A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/17/10 10:37

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sampling method = Low-flow sampling
temp °C = 17.56
cond us/cm = 0.767
DO mg/L = 0.00
pH = 8.41
ORP mV = -316
turb NTU = 1.6

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 19 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-19-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: 7-29-10 ~~MW-7B~~ MW-7A

External Sample Number: 7-29-10 ~~MW-7B~~ MW

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/17/10 12:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

Sampling method = Low-flow sampling

temp °C = 14.33

cond us/cm = 0.782

DO mg/L = 9.25

pH = 7.01

ORP mV = 57

turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 20 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-20-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW ~~7A~~ 7B AF 6/17/10

External Sample Number: MW 7~~B~~

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/17/10 15:50

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sample method = Low-flow sampling
temp °C = 15.20
cond us/cm = 0.795
DO mg/L = 7.78
~~temp~~ pH = 6.93 AF 6/17/10
ORP mV = 66
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 21 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-21-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW9A

External Sample Number: MW9A

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	06/17/10	17:55
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sample method = Low-flow sampling
temp °C = 16.88
cond us/cm = 0.892
DO mg/L = 9.26
pH = 7.76
ORP mV = 66
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 22 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-22-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW1A

External Sample Number: MW1A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/18/10 08:55

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = Low-flow sampling

temp °C = 15.06

cond us/cm = 0.792

DO mg/L = 8.90

pH = 6.96

ORP mV = 135

turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 23 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-23-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW2A

External Sample Number: MW2A

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/18/10	12:57
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 16.02
Cond us/cm = 0.698
DO mg/L = 5.50
pH = 6.70
ORP mV = 135
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 24 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-24-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW13C

External Sample Number: MW13C

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	06/18/10	14:22
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 15.84
cond us/cm = 0.662
DO mg/L = 10.22
pH = 7.18
ORP mV = 118
turb NTU = 6.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 25 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-~~25~~ 24-FD
AF 6/19/10

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW13C Field Duplicate

External Sample Number: MW13C

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/18/10	14:25
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See 4931-24

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 26 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-26-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW13E

External Sample Number: MW13E

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/18/10 15:50
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 20.62
cond uS/cm - 0.442
DO mg/L = 5.81
pH = 7.42
ORP mV = 130
turb NTU = 29.9

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 27 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-27-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW4A

External Sample Number: MW4A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/18/10 17:43

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
samping method - Low-flow sampling
temp °C = 15.32
cond ~~us~~/cm = 0.863
DO mg/L = 9.35
pH = 7.07
ORP mV = 162
turb NTU = 0.4

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 28 **QC Code:** ___ **Matrix:** Water **Tag ID:** 4931-28-___

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW4B

External Sample Number: MW4B

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/18/10 19:10
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)
media = GW
sampling method = Low-flow sampling
temp °C = 15.07
cond mS/cm = 0.873
DO mg/L = 8.88
pH = 7.07
ORP mV = 157
turb NTU = 26.5

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 29 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-29-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: Rinsate Blank

External Sample Number: Rinsate Blank

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/19/10 14:45

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 30 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-30-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW5B

External Sample Number: MW5B

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 08:32

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-Flow sampling
temp °C = 13.50
cond uS/cm = 0.905
DO mg/L = 10.99
pH = 7.00
ORP mV = 131
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 31 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-~~31~~ 30-FD

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW5B Field Duplicate

External Sample Number: MW5B Field Duplicate

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 09:35

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See 4931-30

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 32 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-32-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW5A

External Sample Number: MW5A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 09:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 13.76
cond mS/cm = 0.826
DO mg/L = 12.21
pH = 7.06
ORP = 125
turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 33 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-33-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW5D

External Sample Number: MW5D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 11:17

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 15.17
cond us/cm = 0.583
DO mg/L = 10.30
pH = 7.01
ORP mV = 129
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 34 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-34-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW6D

External Sample Number: MW6D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 __:__
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

media = GW
sampling method: Low-flow sampling
temp °C = 16.34
cond us/cm = 0.542
DO mg/L = 7.50
pH = 7.06
ORP mV = 126
turb NTU = 15.2

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 35 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-~~35~~ 34 -FD

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: *Superfund*
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW 6D Field Duplicate

External Sample Number: MW6D Field Duplicate

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 __:__

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)
See 4931-34

Sample Collected By: AR/HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 36 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-36-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW6A

External Sample Number: MW6A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/20/10 14:40

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)
media = GW
sampling method = Low-flow sampling
temp °C = 15.16
cond uS/cm = 0.833
DO mg/L = 9.72
pH = 6.95
ORP mV = 131
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 37 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-37-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW6E

External Sample Number: MW6E

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	06/20/10	16:23
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow method
temp °C = 18.24
cond us/cm = 0.317
DO mg/L = 2.35
pH = 7.33
ORP mV = 105
turb NTU = 7.6

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 38 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-38-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: Old Dean Rolls well

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	__ __ __	**Sample Collection: Start:**	6/21/10	08:50
Longitude:	__ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sampling method - outdoor spigot
Purged 10 min

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 39 **QC Code:** __ **Matrix:** Water **Tag ID:** 4931-39-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: New Dean Rolls well

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	6/21/10	08:40
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sampling Method - outdoor spigot
Purged 5 min

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 40 **QC Code:** FB **Matrix:** Water **Tag ID:** 4931-40-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA Trip Blank sample 1

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude:	___ ___ ___	**Sample Collection: Start:**	06/16/10	08:15
Longitude:	___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 41 **QC Code:** FB **Matrix:** Water **Tag ID:** 4931-41-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA Trip Blank sample 2

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/17/10	14:30
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4931 **Sample Number:** 42 **QC Code:** FB **Matrix:** Water **Tag ID:** 4931-42-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA Trip Blank sample 3

External Sample Number: Trip Blank

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/19/10 15:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-1-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-FD

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/15/10 14:24
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C, HCL	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Media = GW
Sample Method = Low flow
Temp = °C 18.45
Cond = uS/cm 4830
DO = mg/L 0.69
pH = 7.18
ORP = 316
Turb = NTU 17.2

Note: Accidentally preserved M/E/E VOAs with HCL

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 2 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-2-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-18 ~~A~~ C WM 6/15/10

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/15/10 ~~16:43~~ WM 18:44

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

°C Temp = 20.99
µS/cm Cond = 7250
mg/L DO = 2.92
pH = 6.76
ORP = 331
NTU Turb = 0.3

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-3-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

6/16/10
Location Desc: ~~MW-17 D~~ WM MW-45 D

External Sample Number: ____________

Expected Conc: (or Circle One: Low ~~Medium~~ ~~High~~) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/16/10 16:11

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 19.41 °C
PH = 7.13
Cond = 5510 µS/cm
DO = 3.30 mg/L
ORP = 357 mV
Turb = 9.2 NTU

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

WM 6/16/10

ASR Number: 4932 **Sample Number:** ~~1~~ 3 **QC Code:** FD **Matrix:** Water **Tag ID:** 4932-~~1~~ 3-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4932-3

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/16/10 16:11

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
~~4 - 40mL VOA vial~~	~~4 Deg C, HCL to pH<2~~	~~14~~	~~Days~~	~~1 VOCs in Water by GC/MS for Low Detection Limits~~

Sample Comments:

(N/A)

NO VOC'S in FD sample.

Temp = 19.41 °C
pH = 7.13
cond = 5510 µS/cm
DO = 3.30 mg/L
ORP = 357 mV
Turb = 9.2 NTU

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 5 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-5-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-45C

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/16/10 17:47

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 17.66°C
pH = 7.88
Cond = 6390
DO = 6.43
ORP = 309
Turb = 83.6

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** ~~44~~ 5 (WM) **QC Code:** FD **Matrix:** Water **Tag ID:** 4932-~~44~~ 5 (WM) -__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: (WM) ~~MW-45C~~ Duplicate of 4932-5FD

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/16/10 17:47

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 17.66 °C
pH = 7.88
cond = 6390
DO = 6.43
ORP = 369
Turb = 83.6

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-6-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-46D1

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	6/17/10	09:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
~~1 - 1 Liter Cubitainer~~	~~2 mL H2SO4/L~~	~~28~~	~~Days~~	~~1 Nitrogen, Nitrate+Nitrite in Water~~
~~1 - 1 Liter Cubitainer~~	~~4 Deg C~~	~~14~~	~~Days~~	~~1 Alkalinity in Water by Titration~~
~~1 - 1 Liter Cubitainer~~	~~4 Deg C~~	~~2~~	~~Days~~	~~1 Anions in Water by Ion Chromatography~~
~~1 - 1 Liter Cubitainer~~	~~4 Deg C~~	~~7~~	~~Days~~	~~1 TDS or Total Dissolved Solids~~
~~1 - 1 Liter Cubitainer~~	~~4 Deg C~~	~~7~~	~~Days~~	~~1 NFS or Nonfilterable Solids~~
~~1 - 1 Liter Cubitainer~~	~~5mL H2SO4 to pH<2.5, 4 Deg C~~	~~28~~	~~Days~~	~~1 Total Phosphorus in Water, Colorimetric~~
~~1 - 1 Liter amber glass~~	~~H2SO4 to pH<2, 4 Deg C~~	~~28~~	~~Days~~	~~1 Total Organic Carbon in Water~~
~~2 - 40mL VOA vial~~	~~4 Deg C~~	~~7~~	~~Days~~	~~1 Methane, Ethane, Ethene in Water by GC/FID~~
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

VOC's only.

Temp = 22.68
pH = 6.91
Cond = 1010
DO = 1.04
ORP = 260
Turb = ~~1~~800 (over limit)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-7-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-46 D2

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

First time Sampled

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	6/17/10	12:08
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Extra Vol for MS/MSD

Temp = 23.58°C
pH = 7.13
Cond = 4720 mS/cm
DO = 0.79 µS/cm
ORP = 287
Turb = 15.8

Could not collect triple vol for TOC. Only enough water for double vol.

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 8 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-8-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-42E

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/17/10 18:06
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 19.54
pH = 6.98
Cond = 4250
DO = 1.77
ORP = 271
Turb = 16.5

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-9-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-42D

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/18/10 09:25
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 15.86
Cond = 5280
pH = 6.66
DO = 3.94
ORP = 243
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

WM 6/18/10 WM

ASR Number: 4932 **Sample Number:** ~~10~~ 9 **QC Code:** FD **Matrix:** Water **Tag ID:** 4932-~~10~~ 9-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4932-9

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/18/10 09:25

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
1 - 1 Liter amber glass	H2SO4 to pH<2, 4 Deg C	28	Days	1 Total Organic Carbon in Water
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
~~4 - 40mL VOA vial~~	~~4 Deg C, HCL to pH<2~~	~~14~~	~~Days~~	~~1 VOCs in Water by GC/MS for Low Detection Limits~~

Sample Comments:
(N/A)

MNA Field Duplicate

Temp = 15.86
pH = 5280
Cond = 6.66
DO = 3.94
ORP = 243
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-11-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-105 D

External Sample Number: MW-105 D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/8/10 12:28
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
~~1 - 1 Liter amber glass~~	~~H2SO4 to pH<2, 4 Deg C~~	~~28~~	~~Days~~	~~1 Total Organic Carbon in Water~~
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp°C = 22.62
pH = 7.11
DO = 2.74
Cond = 4050
ORP = 178
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-12-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-18 ~~A~~

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/15/10 16:43

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 16.69
Cond µS/cm = 4570
DO mg/L = 0.77
pH = 6.88
ORP = 345
Turb NTU = 163

Note: Accidentally preserved M/E/E VOAs with HCL

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-13-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-17D

External Sample Number: ____________

Expected Conc: (or Circle One: Low ~~Medium~~ ~~High~~) WM 6/16/10

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	6/16/10	10:56
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 17.58 °C
pH = 7.48
Cond = 2850 µS/cm
DO = 0.00 mg/L
ORP = 314 mV
Turb = 34.1 NTU

Sample Collected By: AR/HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-14-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-44D

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/18/10 12:48
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 18.71
pH = 6.99
DO = 2.71
Cond = 3700
ORP = 264
Turb = 2.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-15-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-44 E

External Sample Number: ________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/18/10 14:38

Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28 Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14 Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2 Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7 Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7 Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28 Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7 Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 17.06
pH = 7.22
Cond = 3230
DO = 0.99
ORP = 269
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 16 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-16-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-105A

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

	Date	Time(24 hr)
Latitude: ___ ___ ___ **Sample Collection: Start:**	6/18/10	17:48
Longitude: ___ ___ ___ **End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = ~~18.14~~ 17.43
pH = ~~8.04~~ 8.06
DO = ~~0.00~~ WM 0.00
ORP = ~~196~~ 6/18/10 196
Cond = ~~8110~~ 8050
Turb = 16.5

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 17 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-17-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-105C

External Sample Number: MW-105C

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** ~~6/18/10~~ 6/19/10 (VM) 10:08

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 16.09 °C
pH = 7.16
DO = 0.85 mS/cm
cond = 6690 mS/cm
ORP = 173 mV ORP
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 18 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-18-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-12D

External Sample Number: MW-12D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/9/10 15:11
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 1 Liter Cubitainer	2 mL H2SO4/L	28	Days	1 Nitrogen, Nitrate+Nitrite in Water
1 - 1 Liter Cubitainer	4 Deg C	14	Days	1 Alkalinity in Water by Titration
1 - 1 Liter Cubitainer	4 Deg C	2	Days	1 Anions in Water by Ion Chromatography
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 TDS or Total Dissolved Solids
1 - 1 Liter Cubitainer	4 Deg C	7	Days	1 NFS or Nonfilterable Solids
1 - 1 Liter Cubitainer	5mL H2SO4 to pH<2.5, 4 Deg C	28	Days	1 Total Phosphorus in Water, Colorimetric
2 - 40mL VOA vial	4 Deg C	7	Days	1 Methane, Ethane, Ethene in Water by GC/FID
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 21.11
pH = 6.95
Cond = 4680
DO = 2.49
ORP = 184
Turb = 20.2

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 19 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-19-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-17A

External Sample Number: ____________

Expected Conc: (or Circle One: Low ~~Medium~~ ~~High~~) WM 6/16/10

		Date	Time(24 hr)
Latitude: __ __ __	**Sample Collection: Start:**	6/16/10	09:16
Longitude: __ __ __	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Temp = 14.11
pH = 6.83
Sp. Cond = 8420
DO = 5.62
ORP = 342
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 20 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-20-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-17C

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	6/16/10	12:35
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 15.55
pH = 7.24
Cond = 6410
DO = 0.02
ORP = 327
Turb = 198

Sample Collected By: AR/HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

6/16/10

ASR Number: 4932 **Sample Number:** ~~45~~ 20 WM **QC Code:** FD **Matrix:** Water **Tag ID:** 4932-~~45~~ 20 WM

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4932-20

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	6/16/10	12:35
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 15.65
pH = 7.24
cond = 6410
DO = 0.02
ORP = 327
Turb = 198

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 21 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-21-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-12C

External Sample Number: MW-12C

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/19/10 16:57
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Temp = 19.16°C
pH = 6.80
Cond = 6280
DO = 4.44
ORP = 232
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

WM

ASR Number: 4932 **Sample Number:** ~~22~~ 21 **QC Code:** FD **Matrix:** Water **Tag ID:** 4932-~~22~~21-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: Duplicate of 4932-21

External Sample Number: Duplicate of 4932-21

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/19/10 16:57

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 19.16
pH = 6.80
cond = 6860
DO = 4.44
ORP = 232
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 23 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-23-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-12A

External Sample Number: MW-12A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/19/10 17:53
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 18.77 °C
pH = 7.06
DO = 4.83 mg/L
Cond = 9630 µS/cM
ORP = 235 mV
Turb = 0.00

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 24 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-24-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-43 E

External Sample Number: MW-43 E

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/20/10 08:46
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Temp= 15.57
pH= 6.73
Cond= 4050
DO= 1.70
ORP= 201
Turb= 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 25 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-25-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-43D

External Sample Number: MW 43D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/20/10 09:35
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Temp= 16.49 °C
pH= 6.78
Cond= 5120 μs/cm
DO= 3.57 mg/L
ORP= 223 mV
Turb= 3.9 NTU

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 26 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-26-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-41D2

External Sample Number: MW-41D2

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/30/10 11:26
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 17.33
pH = 6.88
COND = 3520
DO = 2.40
ORP = 223
Turb = 24.2

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 27 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-27-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-41D1

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/10/10 12:51
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 16.57 °C
pH = 6.96
Cond = 6640 µS/cm
DO = 0.99 mg/L
ORP = 208 mV
Turb = 0.0 NTU

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 28 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-28-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-11A

External Sample Number: ______

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/20/10 15:40
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 20.44
pH = 6.71
Cond = 7070
DO = 2.91
ORP = 274
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 29 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-29-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW16A

External Sample Number: MW16A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/21/10 09:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp °C = 14.28
cond us/cm = 0.917
DO mg/L = 7.30
pH = 6.82
ORP mV = 148
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 30 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-30-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW16C

External Sample Number: MW16C

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	06/21/10	09:55
Longitude: ___ ___ ___	**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

AF 6/21/10 ~~met~~ sampling method = Low-flow sampling

temp °C = 15.42

cond us/cm = 0.785

DO mg/L = 11.52

pH = 6.79

ORP mV = 130

turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 31 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-31-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW10B

External Sample Number: MW10B

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/21/10 11:34
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)
media = GW
Sampling method = Low-flow sampling
temp °C = 15.04
cond uS/cm = 0.799
DO mg/L = 9.37
pH = 7.03
ORP mV = 132
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 32 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-32-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: 7-29-10 ~~MW5A~~ MW-10A

External Sample Number: 7-29-10 ~~MW5A~~ MW-10A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/21/10 12:20

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low-flow sampling
temp°C = 18.72
cond us/cm = 0.866
DO mg/L = 8.17
pH = 7.05
ORP mV = 132
turb NTU = 6.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 33 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-33-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW106D

External Sample Number: MW106D

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/21/10 __:__
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

media = GW
sample method = Low-flow sampling
temp °C = 19.76
cond us/cm = 3680
DO mg/L = 1.51
pH = 7.24
ORP mV = 100
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 34 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-34-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-104C

External Sample Number: MW-104C

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/21/10 08:53
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Temp = 16.05
pH = 6.68
Cond = 4350
DO = 2.98
ORP = 219
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 35 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-35-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-104D

External Sample Number: ____

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: __ __ __ **Sample Collection: Start:** 6/21/10 09:32
Longitude: __ __ __ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp= 17.50
pH= 6.83
cond= 3290
DO= 1.90
ORP= 2.15
Turb= 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 36 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-36-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-104 A

External Sample Number: MW-104A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/21/10 10:33

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 20.14
pH = 6.78
Cond = 9980
DO = 3.10
ORP = 233
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 37 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-37-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-14A

External Sample Number: MW-14A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/21/10 11:43

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 23.62
pH = 6.70
cond = 8630
DO = 3.25
ORP = 243
Turb = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 38 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-38-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW106A

External Sample Number: MW106A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/21/10 16:15

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)
media = GW
sampling method = low-flow sampling
temp °C = 16.97
cond us/cm = 7850
DO mg/L = 4.51
pH = 6.98
ORP mV = 115
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 39 **QC Code:** __ **Matrix:** Water **Tag ID:** 4932-39-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW106C

External Sample Number: MW106C

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 06/21/10 __:__
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Media = GW
Sampling method = Low-flow sampling
temp °C = 17.54
Cond us/cm = 5520
DO mg/L = 5.54
pH = 6.76
ORP mV = 120
turb NTU = 0.0

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 46 **QC Code:** FB **Matrix:** Water **Tag ID:** 4932-46-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: LDL VOA Trip Blank sample 1

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/16/10 16:00
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:
(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 47 **QC Code:** FB **Matrix:** Water **Tag ID:** 4932-47-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: LDL VOA Trip Blank sample 2

External Sample Number: ______________

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/17/10 14:30

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AR/HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 4932 **Sample Number:** 48 **QC Code:** FB **Matrix:** Water **Tag ID:** 4932-48-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: LDL VOA Trip Blank sample 3

External Sample Number: ____________

Expected Conc: (or Circle One: Low Medium High)

			Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection:**	**Start:**	6/21/10	09:30
Longitude: ___ ___ ___		**End:**	__/__/__	__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AR/HGL

EQuIS Hapsite Sample Field Sheets

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: IRRIGATION WELL ~~WEST OF [illegible]~~ EAST OF GARVEY (RW) 08-22-09

EPA LAB Split Sample Number: 4523-30

Sample Location/Description: IRRIGATION Well

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 15:50

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) NA Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS105-GW-130

EPA LAB Split Sample Number: 4523-8

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 09:00

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 130-134' Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML- TS105-GW-140

EPA LAB Split Sample Number: 4523-6

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-21-09 Time of Collection: 08:30

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 140-144 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ML-TS105-GW-140FD

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS105-GW-140 FD

EPA LAB Split Sample Number: 4523-6

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-21-09 Time of Collection: 08:30

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 140-144 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ML-TS105-GW-140-FD (*)

(*) This is the Duplicate Sample

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet

HAPSITE Sample Information

Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: MK-TS105-GW-151

EPA LAB Split Sample Number: 4523-5

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/20/09 Time of Collection: 16:40

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 151-155 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML - TS105-GW -160

EPA LAB Split Sample Number: 4523-4

Sample Location/Description: TS1- 05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-20-09 Time of Collection: 13:30

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 160 -164 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML - TS105 - GW - 170

EPA LAB Split Sample Number: 4523-3

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-20-09 Time of Collection: 1500

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 170-174 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS105-GW-180

EPA LAB Split Sample Number: 4523-3

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/20/09 Time of Collection: 09:32

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 180-184 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML- TS105-GW-190

EPA LAB Split Sample Number: 4523-1

Sample Location/Description: TS1-05 @ RU

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-19-09 Time of Collection: 18:00

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 190-194 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS105-GW-200

EPA LAB Split Sample Number: 4523-23

Sample Location/Description: TS1-05

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-19-09 Time of Collection: 15:48

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 200-204 Matrix: groundwater

Analyses:

EPA R7 Lab: ~~LDL VOCs~~

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: NA

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML - TS202 - GW - 147

EPA LAB Split Sample Number: 4423 - 17

Sample Location/Description: TS2 - 02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 12:10

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 147-151 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:__________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-155

EPA LAB Split Sample Number: 4523-16

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 11:25

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 155-159 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-165

EPA LAB Split Sample Number: 4523-15

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/27/09 Time of Collection: 10:40

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 165-169 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-175

EPA LAB Split Sample Number: 4523-14

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 10:20

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 175-179 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-185

EPA LAB Split Sample Number: 4523-13

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 9:48

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 185-189 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: *carbon tetrachloride*, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-195

EPA LAB Split Sample Number: 4523-11

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/ /09 Time of Collection: 9:10

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 195-199 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ML-TS202-GW-195FD

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-195 FD

EPA LAB Split Sample Number: 4523-11

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 9:10

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 195-199 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ML-TS202-GW-195 FD *

* This is the Duplicate Sample

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-205

EPA LAB Split Sample Number: 4523-10

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 8:35

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 205-209 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS202-GW-214

EPA LAB Split Sample Number: 4523-9

Sample Location/Description: TS2-02

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/22/09 Time of Collection: 08:00

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 214-218 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-144

EPA LAB Split Sample Number: 4523-38

Sample Location/Description: TS205/144-148

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 16:45

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 144-148 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-151

EPA LAB Split Sample Number: 4523-37

Sample Location/Description: TS205/151-155

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 16:00

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 151-156' Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: __________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-164

EPA LAB Split Sample Number: 4523-35

Sample Location/Description: TS205/ 164-168

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8-23-09 Time of Collection: 18:20

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 164-168 FT Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-174

EPA LAB Split Sample Number: 4523-35

Sample Location/Description: TS205/174-178

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 14:30

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 174-178' Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

*If yes, duplicate sample ID:*__________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-184

EPA LAB Split Sample Number: 4523-34

Sample Location/Description: TS205/184-188

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 11:45

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 184-188 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-194

EPA LAB Split Sample Number: 4623-33

Sample Location/Description: TS205/194-198

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 11:05

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 194-198 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ML-TS205-GW-194-FD

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-204

EPA LAB Split Sample Number: 4523-32

Sample Location/Description: TS205/204-208 ft bgs

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 10:15

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 204-208 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS205-GW-214

EPA LAB Split Sample Number: 4523-31

Sample Location/Description: TS205/214-218 ft bgs

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 9:45

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 214-218 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: __________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML - TS206 - GW - 144

EPA LAB Split Sample Number: 4522-9

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09   Time of Collection: 16:55

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 144-148   Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:____________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-151

EPA LAB Split Sample Number: ~~4522-7~~ 4522-8 SH 8/23/09

Sample Location/Description: TS206

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 15:55

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 151-155 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:__________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

ML-TS206-GW-164

HAPSITE Sample Number: ~~ML-TS206-GW-164~~ 8/23/09

EPA LAB Split Sample Number: 4522-7

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 15:30

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 164-168 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-174 FD

EPA LAB Split Sample Number: 4522-6

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 14:55

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 174-178 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE ~~Y/N~~ Y/N

If yes, duplicate sample ID: ML-TS206-GW-174 FD *

* This is the Duplicate Sample

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-174

EPA LAB Split Sample Number: 4522-6

Sample Location/Description: TS206

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 14:55

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 174-178 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ML-TS206-GW-174FD

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-184

EPA LAB Split Sample Number: 4522-5

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 14:25

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 184-188 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:__________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-194

EPA LAB Split Sample Number: 4522-3

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 13:20

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 194-198 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-204

EPA LAB Split Sample Number: 4522-2

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 12:40

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 204-208 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:__________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS206-GW-214

EPA LAB Split Sample Number: 4522-1

Sample Location/Description: TS2-06

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/23/09 Time of Collection: 11:55

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 214-218 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:__________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS302-GW-119

EPA LAB Split Sample Number: 4523-28

Sample Location/Description: TS302: 119-123

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 13:20

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 119-123 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS302-GW-129-133

EPA LAB Split Sample Number: 4523-26

Sample Location/Description: TS302: 129-133'

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 12:45

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 129-133 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: M-TS302-GW-139-143

EPA LAB Split Sample Number: 4523-26

Sample Location/Description: TS302: 139-143'

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 12:30

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 139-143 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID: ______

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS302-GW-164-168

EPA LAB Split Sample Number: 4523-25

Sample Location/Description: TS302: 164-168

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 10:05

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 164-168' Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS302-GW-174-178

EPA LAB Split Sample Number: N/A – not collected, insufficient vol.

Sample Location/Description: TS302 : 174-178

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/21/09 Time of Collection: 09:00

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 174-178 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y/N

If yes, duplicate sample ID:____________________

MS/MSD Extra Volume collected for HAPSITE Y/N

Field Sheet
HAPSITE Sample Information
Garvey Elevator Site – Hastings, NE

HAPSITE Sample Number: ML-TS302-GW-184-188

EPA LAB Split Sample Number: 4523-24

Sample Location/Description: TS302: 184-188

General Task Description: Off-site (OU2) DPT Groundwater Sampling

Date of Collection: 8/20/09 Time of Collection: 17:45

Sampling Method: DPT Screen point and inertial/mechanical bladder pump

Sample Depth (ft bgs) 184-188 Matrix: groundwater

Analyses:

EPA R7 Lab: LDL VOCs

EPA HAPSITE ML: carbon tetrachloride, chloroform, carbon disulfide, EDB, dichloromethane, and chloromethane

QC Samples

Field Duplicate collected for HAPSITE Y N

If yes, duplicate sample ID: __________

MS/MSD Extra Volume collected for HAPSITE Y N

APPENDIX J

INSTRUMENT CALIBRATION SHEETS

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HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GROUNDWATER SAMPLING

Equipment Description: Thermo Environmental PID

Equipment ID: 580 B OVM

Equipment Serial No.: U55870X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9/4/09 7:16	isobutylene	100ppm	09-3732 11/26/10	100	pass	[signature]
9/5/09 7:22	isobutylene	100 ppm	09-3732 11/26/10	100	pass	[signature]
9/6/09 9:00	isobutylene	100 ppm	09-3732 11/26/10	100	pass	[signature]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: ______

Equipment Description: LaMotte 2020

Equipment ID: 401151

Equipment Serial No.: 1708-1400

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9-4-09 07:08	1.0, 10.0, 0.0		Nove. 2009	1.0, 10.0, 0.0	Pass	Leah Sperare
9-5-09 ~~08~~:10	1.0, 10.0, 0.0		"	1.2, 10.0, 0.0	Pass	Leah Sper
9-6-09 09:05	1.0, 10.0, 0.0		"	1.3, 10.09, 0.0	Pass	Leah Sperge
9-7-09 07:06	1.0, 10.0, 0.0		Nov. 2009	1.1, 10.0, 0.0	Pass	Leah Sperge

Maintenance Performed: ______

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity:

Equipment Description: YSI 556 MPS

Equipment ID: 05H2352AA

Equipment Serial No.: US 0225X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9/6/09 8:55	pH	4.0 7.0 10.0	10/31/10	3.93 7.01 10.0	Pass	Leah Speranza
"	Conductivity	1.409	10/31/10	1.409	"	"
"	ORP	237.5	04/2011	237.5	"	"
9/7/09 07:06	pH	4.0 7.0 10.0	10/31/10	3.93 7.0 10.0	Pass	Leah Speranza
"	Conductivity	1.409	10/31/10	1.409	"	"
"	ORP	237.5	04/2011	237.5	"	"

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Transect Sampling

Equipment Description: MiniRAE 2000

Equipment ID: U00858X

Equipment Serial No.: PMB-7600 110-002779

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9/3/09 07:20	PID	100 PPM Isobutylene	09-3732 12/26/10	114	Pass	
9/4/09 7:10	PID	"	"	~~112~~ 100.0	Pass	
9/5/09 7:10	PID	"	"	102	Pass	
9/6/09 9:00	PID	"	"	111	Pass	
9/7/09 07:15	PID	"	"	93	Pass	

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Sampling

Equipment Description: YSI 556 MPS

Equipment ID: 05H2392AA

Equipment Serial No.: US 0225X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9/3/09 07:05	pH	4.0 7.0 10.0	10/31/10	3.94 7.0 10.0	Pass	Leah Sperge
"	Conductivity	1.409	10/31/10	1409	Pass	Leah Sperge
"	ORP	237.5	04/2011	237.5	Pass	Leah Sperge
9/4/09 07:08	pH	4.0 7.0 10.0	10/31/10	3.94 7.0 10.0	Pass	Leah Sperge
"	Conductivity	1.409	10/31/10	1409	Pass	"
"	ORP	237.5	04/2011	237.5	Pass	Leah Sperge
9/5/09 07:09	pH	4.0 7.0 10.0	10/31/10	3.96 7.0 10.0	Pass	Leah Sperge
"	Conductivity	1.409	10/31/10	1.409	Pass	"
"	ORP	237.5	04/2011	237.5	Pass	"

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GROUNDWATER SAMPLING

Equipment Description: YSI 556 MPS

Equipment ID: U51995X

Equipment Serial No.: 06G2421AO

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9/1/09 07:10	pH	4 7 10	10/31/10	4.0 7.0 9.99	Pass	RKaspzyk
9/1/09 07:15	Conductivity	1.409 mohm/cm	10/31/09	1409 mohm/cm	Pass	↓
9/1/09 07:15	ORP	2375	10/31/09	2375	Pass	↓
9/2/09 07:05	pH	4 7 10	10/31/09	4.0 7.0 10	Pass	RKaspzyk
9/2/09 12:00	CONDUCTIVITY	1.409 mohm/cm	10/31/09	1.409 mohm/cm	Pass	↓
9/2/09 12:05	ORP	2375	09C101852 04-2011	237.5	Pass	↓
9-3-09 07:05	pH	4 7 10	10/31/10	4.00 7.00 10	Pass	RKaspzyk
9-3-09 07:10	CONDUCTIVITY	1.409 mohm/cm	10/31/09	1.409 µS/cm	Pass	↓
9/3/09 07:15	ORP	237.5 mV	09C101852 04-2011	236.9	Pass	↓

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GROUNDWATER SAMPLING

Equipment Description: YSI 556 MPS

Equipment ID: N 51995 X

Equipment Serial No.: 06G2471 AO

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8-22-09 07:05	pH	4.0 7.0 10.0	10/31/10 ↓	4.01 7.05 9.93	Pass Pass Pass	R Kaszyk
8-22-09 07:15	CONDUCTIVITY	1409 µmho/cm	10/31/09	1410	Pass	RKaszyk
8-23-09 07:05	pH	4 7 10	10-31-09	4.03 7.02 9.93	Pass	RKaszyk
8-23-09 07:10	CONDUCTIVITY	1409 µmho/cm	10/31/09	1410 mS/cm	pass	RKaszyk
8/23/09 07:15	ORP	237.5	09C101852 04/2011	237.8	pass	RKaszyk
8/24/09 07:00	pH	4.0 7.0	10/31/10	4.0 7.0 9.99	pass	RKaszyk
8/24/09 07:05	CONDUCTIVITY	1409 µOhm/cm	10/31/09	1409	Pass	RKaszyk
8/24/09 07:10	ORP	237.5	09C101852 04/2011	237.5	pass	RKaszyk
8-25-09 07:00	pH	4 7 10	~~4.00~~ 10/31/09	4.0 7.0 9.99	Pass	RKaszyk
8-25-09 07:10	CONDUCTIVITY ORP	1409 µohm/cm 237.5	10-31-09 09C101852 04/2011	1409 µohm/cm 237.5	Pass pass	RKaszyk

Maintenance Performed:

HGL
HydroGeoLogic, Inc
Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GROUNDWATER SAMPLING

Equipment Description: YSI 556 MPS

Equipment ID: 08E100203

Equipment Serial No.: MPS-04 ~~0~~ 56511X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8-21-09 07:10	CONDUCTIVITY	1409 µS/cm	888-09 09-2710	1409	Pass	BKaspryzk
8-21-09 07:15	ORP	237.5	09C101852 04/2011	239.5	Pass	BKaspryzk
8/21/09 07:20	pH	4 7 10	8301-23 103010 8133-04 6/1/10 8324-03 12/03/09	—	FAIL	BKaspryzk
~~8-22-09 07:00~~	~~pH~~	~~4 7 10~~	~~8301-23 10/30/10 8133-04 6/1/10 8324-03 12/03/09~~	~~4.63~~	~~Pass~~	KK 09/03/09

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: Groundwater sampling

Equipment Description: Thermo Environmental Instruments - OVM

Equipment ID: 580B OVM

Equipment Serial No.: U55870X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/18/09 8:30	isobutylene	iso 100 ppm	09 3782 11/22/10	101.4	Pass ~~Fail~~ @ 8/18/09	[illegible]
8/20/09 07:15	isobutylene	—	—	—	Not calibrated, no calibration gas	[illegible]
8/21/09 07:10	—	—	—	—	NOT CALIBRATED GAS NOT AVAILABLE	[illegible]
8/22/09 07:00	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]
8/23/09 07:15	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]
8/24/09 07:00	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]
8/25/09 07:00	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]
9/1/09 07:15	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]
9/2/09 07:15	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]
9/3/09 07:30	isobutylene	100 ppm	09-3732 11/26/10	100.0	pass	[illegible]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Transect Sampling

Equipment Description: ~~OSH~~ YSI 556 MPS

Equipment ID: OSH 2352AA

Equipment Serial No.: USD 225X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/25/09 07:12	Conductivity	1.409	10/31/10	1409	Pass	Leah Sperga
"	ORP	237.5	~~No Cal Soluti~~ 04/2011	237.5	Pass	Leah Sperga
9/1/09 07:10	pH	4.0 7.0 10.0	10/31/10	3.99 7.01 10.0	Pass	Leah Speran
"	conductivity	1.409	10/31/10	1.409	Pass	Leah Speran
"	ORP	237.5	04/2011	237.5	Pass	Leah Sperga
9/2/09 07:03	pH	4.0 7.0 10.0	10/31/10	3.98 7.0 10.0	Pass	Leah Sperga
"	Conductivity	1.409	10/31/10	1.409	Pass	Leah Sperga
"	ORP	237.5	04/2011	237.5	Pass	Leah Sperga

Maintenance Performed:

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Sampling

Equipment Description: LaMotte 2020

Equipment ID: 401151

Equipment Serial No.: 1708-1400

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/18/09 08:00	1.0 turbidity 10.0	8184 P891941 8184-P890791	Nov 2009 Nov 2009	1.08 10.51	Pass Pass	[illegible]
8/19/09 7:11	1.0 10.0	11	11	1.00 10.16	Pass	Leah Sperga
8/20/09 07:05	1.0 0.0 10.0	"	"	0.98 0.0 10.0	Pass	Leah Sperga
8/21/09 07:10	1.0 10.0	"	"	1.08 9.97	Pass	[illegible]
8/22/09 07:05	1.0 0.0 10.0	"	"	1.00 0.09 9.54	Pass	Leah Sperga
8/23/09 07:05	1.0 0.0 10.0	"	"	0.98 0.05 10.0	Pass	Leah Sperga
8/24/09 7:25	1.0 0.0 10.0	"	"	0.95 0.00 10.0	Pass	[illegible]
8-25-09 07:00	1.0 0.0 10.0	"	"	1.0 0.0 10.0	Pass	Leah Sperga
9-1-09 07:15	1.0 10.0 0.0	"	"	0.95 10.0 0.0	Pass	Leah Sperga
9-3-09 07:22	1.0 10.0 0.0	"	"	1.2 9.9 0.0	Pass	Leah Sperga

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW sampling

Equipment Description: LaMotte 2020 Turbidmeter

Equipment ID:

Equipment Serial No.: U01614X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/22/09	turbidity	10.0	July 2009	9.98	pass	[signature]
8/23/09	turbidity	0.0	NOV 2009	0.00	pass	[signature]
8/23/09	turbidity	1.0	NOV 2009	1.0	pass	[signature]
8/23/09	turbidity	10.0 ~~2~~ AG 8/23/09	NOV 2009	10.02	pass	[signature]
8/24/09	turbidity	0.0	NOV 2009	0.0	pass	[signature]
8/24/09	turbidity	1.0	NOV 2009	0.99	pass	[signature]
8/24/09	turbidity	10.0	NOV 2009	10.02	pass	[signature]
8/25/09	turbidity	0.0	NOV 2009	0.00	pass	[signature]
8/25/09	Turbidity	1.0	NOV 2009	0.99	pass	[signature]
8/25/09	Turbidity	10.0	NOV 2009	9.97	pass	[signature]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Transect Sampling

Equipment Description: OSH2352AA

Equipment ID: YSI 556 MPS

Equipment Serial No.: US0225X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8-22-09 07:10	Conductivity	1409	10/31/10	1408	Pass	Leah Speraza
"	PH	4 7 10	10/31/10 / no lots	4 6.48 10.01	Pass	[illegible]
"	ORP	237.5	no cal solution		can't calibrate	[illegible]
8/23/09 07:14	pH	4 7 10	Same as above	4.0 7.0 10.0	Pass	Leah Speraza
"	ORP	237.5	~~No cal~~ 04/2011	237.5	Pass	"
"	Conductivity	1409	10/31/10	1409	Pass	"
8/24/09 07:00	pH	4 7 10	04/2011 ~~Same as above~~	4.01 7.0 10.0	Pass	Leah Speraza
"	ORP	237.5	"	237.5	Pass	Leah Speraza
"	Conductivity	1409	"	1409	Pass	Leah Speraza
8/25/09 07:05	pH	4 7 10	"	3.99 7.0 10.01	Pass	Leah Speraza

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: Groundwater sampling

Equipment Description: LaMotte 2020 Turbidmeter

Equipment ID:

Equipment Serial No.: 6614X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9/1/09 7:15	turbidity	0.00	8184-P891441 NOV 2009	0.00	pass	[signature]
9/1/09 7:15	turbidity	1.0	8184-P891441 NOV 2009	1.09	pass	[signature]
9/1/09 7:15	turbidity	10.0	8184-P891441 NOV 2009	AL 9/1/09 ~~10~~ 9.99	pass	[signature]
9/2/09 7:30	turbidity	0.0	8184-P891441 NOV 2009	0.00	pass	[signature]
9/2/09 7:15	turbidity	1.0	8184-P891441 NOV 2009	1.01	pass	[signature]
9/2/09 7:15	turbidity	10.0	8184-P891441 NOV 2009	10.04	pass	[signature]
9/3/09 7:10	turbidity	0.00 1.0 10.0	8184-P89144 NOV 2009	0.00 1.0 10.06	pass pass pass	[signature]
9/4/09 7:10	Turbidity	0.0 1.0 10.0	8184-P89144 NOV 2009	0.00 1.00 9.99	pass pass pass	[signature]
9/5/09 7:15	TURBIDITY	0.0 1.0 10.0	8184-P89144 NOV 2009	0.00 1.00 10.05	pass pass pass	[signature]
9/6/09 9:00	TURBIDITY	0.0 1.0 10.0	8184-P89144 NOV 2009	0.00 1.0 10.07	pass pass pass	[signature]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GROUNDWATER SAMPLING

Equipment Description: YSI 556 MPS

Equipment ID: U 517957

Equipment Serial No.: 06G2421 AO

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
9-4-09 07:05	pH	4 7 10	10/31/09	4 7 10	Pass	RKamph
9-4-09 07:20	CONDUCTIVITY	1409 µohm/cm	10/31/10	1.409 mS/cm	pass	↓
9-4-09 07:30	ORP	237.5 mV	04/2011 09C101852	237.5 mV	pass	↓
9-5-09 07:08	pH	4 7 10	10/31/09	4.0 7.0 10.01	Pass	RKamph
9-5-09 07:15	CONDUCTIVITY	1409 µohm/cm	10/31/09	1.409 mS/cm	Pass	↓
9-5-09 07:20	ORP	237.5 mV	04-2011 09C101852	237.5 mV	Pass	↓
9-6-09 09:00	pH	4 7 10	10/31/09	4.0 7.0 10.0	Pass	RKamph
9-6-09 09:05	CONDUCTIVITY	1409 µohm/cm	10/31/09	1.409 mS/cm	pass	↓
9-6-09 09:10	ORP	237.5 mV	10/31/09	237.5	pass	↓

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Transect Sampling

Equipment Description: miniRAE 2000

Equipment ID: U00 858X

Equipment Serial No.: PGM 7600 110-002779

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/18/09 07:00	Isobutlene	100 ppm	09-3732 12/27/10	104	Pass	[signature]
8/19/09 ~~8/18/09~~ 07:10	"	"	"	107	Pass	[signature]
8/20/09 07:05	PID not calibrated due to lack of Isobutlene supply					
8/21/09 07:05	Same as yesterday					
8/22/08 07:00	Isobutylene	100 ppm	09-3732/12/27/10	99.8	Pass	Leah Sperge
8/23/09 07:11	Isobutylene	100 ppm	"	101	Pass	Leah Sperge
8/24/09 7:20	"	"	"	110	Pass	[signature]
8/25/09	"	"	"	112	Pass	Leah Sperge
9/1/09	"	"	"	110	Pass	[signature]
9/2/09	"	"	"	110	Pass	[signature]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Sampling

Equipment Description: LaMotte 2020 Turbimeter

Equipment ID:

Equipment Serial No.: U01614X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8-7-09 1015	Turbidity	1.0		1.01	Pass	[signature]
~~8-18-09~~ AB ~~08:24~~ AB	↓	10.0		10.01	Pass	[signature]
8-18-09 08:24	turbidity	1.0	July 2009	1.01	pass	[signature]
8-18-09 08:24	turbidity	10.0	July 2009	10.05 ~~9.89~~ AH 8/18	pass	[signature]
8-20-09 07:10	turbidity	1.0	July 2009	1.03	pass	[signature]
8-20-09 07:14	turbidity	10.0	July 2009	10.04	pass	[signature]
8-21-09 07:08	turbidity	1.0	July 2009	1.16 0.75 1.45 | 0.85 1.32 0.65	fail fail fail | fail fail fail	[signature]
8-21-09 07:14	turbidity	1.0	July 2009	1.06	pass	[signature]
8-21-09 07:15	turbidity	10.0	July 2009	9.23 10.97 10.05	fail fail pass	[signature]
8-22-09 07:00	turbidity	1.0	July 2009	~~0.90~~ AH 8/22/09 1.0	pass	[signature]

Maintenance Performed:

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: Groundwater Sampling

Equipment Description: YSI 556 MPS

Equipment ID: 08E100203

Equipment Serial No.: MPS-04 US6511X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
08/18/09 07:10	pH	4.0	8301-23 10-30-10 ~~NA~~ RK 8/18/09	4.00	Pass	RKassy
8/18/09 07:10	pH	7.0	8133-04 6-4-10	7.0	Pass	RKassy
8/18/09 07:10	pH	10.0	8324-03 12/03/09	10.0	Pass	RKassy
8/18/09	Conductivity	1409 µS/cm	888-09 09-27-10	1409	Pass	RKassy
8/18-09	ORP	237.5	09C101852 RK ~~8-709~~ 04/2011	237.5	Pass	RKassy
8-20-09 07:10	pH	4 7 10	8301-23 10-30-10 8133-04 6-4-10 8324-03 12-03-09	3.94 7.0 10.8	PASS PASS FAIL	RKassy
8-20-09 07:40	CONDUCTIVITY	1409 µS/cm	888-09 09-27-10	1408	Pass	RKassy
0900	ORP	237.5	09C101857 04/2011	237.5	Pass	RKassy

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Transect Sampling

Equipment Description: YSI 556 MPS

Equipment ID: 4472914

Equipment Serial No.: 04C1624AR

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/18/09 07:00	PH	4 7 10	830123 - 10/30/10 825512 - 9/17/10 8329 03 - 12/31/09	4.0 7.02 10.02	Pass Pass Pass	[signature]
"	conductivity	1409	828809 / 9/27/10	1.408	Pass	[signature]
"	ORP	237.5	09L101852 04/2011	237.5	Pass	[signature]
8/19/09 07:18	pH	4 7 10	same as above	3.99 7.0 10.0	Pass	Leah Sperger
"	conductivity	1409	"	1.409	Pass	Leah Sperger
"	ORP	237.5	"	237.5	Pass	Leah Sperger
8/20/09 07:25	pH	4 7 10	"	3.99 out of range	NO	~~Leah Sperger~~ [signature]
"	conductivity	1409	Same as above	1410	Pass	[signature]
"	ORP	237.5	Same as above	237.5	Pass	[signature]
8-21/09 07:05	PH - will not calibrate, expecting a new YSI today					

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW Transect Sampling

Equipment Description: YSI 556 MPS

Equipment ID: 447291Y

Equipment Serial No.: 04C1624 AR

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8-21-09 07:10	Conductivity	1409	8288-09/9/27/10	1410	Pass	Leah Sperga
"	ORP	237.5	09C101852/042011	237.5	Pass	Leah Sperga
~~8-22-09~~			~~058235~~			

Maintenance Performed:

DPT GW Sampling Calibration Info.

YSI (556 MPS) S/N 08E100203

	PARAM.	Std Conc.	Lot # / Exp	Cal Reading	
8/10/09 08:00	pH	7	—	AB 8/10/09 ~~6.99~~ 7.06	Ably Broadstone
	pH	4	—	3.99	
	Cond	1409 umho/cm	—	1.409 mS/cm	
	ORP	234.5 @ 22.5°C	09C101852/ 4/2011	234.4	
8/11/09 0755	pH	7	—	6.99	Ably Broadstone
	pH	4	—	3.99	
	COND.	1409 umho/cm	09C1018522/ 4/2011	1.409 ms/cm	
	ORP	234.5 @ 22.5°C	↓	234.5	
8/12/09 0730	pH	7	—	7.0	Ably Broadstone
	pH	4	~~4.0~~ AB	4.0	
	COND	1409 umho/cm	—	1.401 ms/cm	
	ORP	234.5 @ 22.5°C	09C1018522/ 4/2011	234.5	

HGL HydroGeoLogic, Inc.
Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: DPT GW Sampling

Equipment Description: La Motte 2020 Turbidimeter

Equipment ID:

Equipment Serial No.: 1492-5099

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/10/09 08:00	Turbidity	0.0 NTU 1.0 NTU 10 NTU	8184-P783996 (7/2009) 8184-P890791 (7/2009)	0.0 NTU 0.99 NTU 9.98 NTU	PASS	Ably Broadstone
8/10/09 0810	TURBIDITY	0.0 NTU 1.0 NTU 10 NTU	" "	0.0 NTU 1.0 NTU 9.93 NTU	PASS	PGChase
8/12/09 07:25	"	"	"	0.0 NTU 1.01 NTU 10.00 NTU	PASS	Ably Broadstone

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: Soil Sampling/EC logging

Equipment Description: THERMO OVM 580B

Equipment ID: ~~US5580X~~ US5870X

Equipment Serial No.: 580U-52999-294

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/4/09 @ 7:30	ISOBUTYLENE	100 ppm	~~09-3732~~ 09-3732 11/27/10	101.8	PASS	[signature]
8/5/09 @ 07:30	"	"	"	108.4	PASS	Ally Broadstone
8/6/09 @ 07:15	"	"	"	105.0	PASS	Ally Broadstone
8/7/09 @ 7:15	"	"	"	105.1	PASS	Ally Broadstone
8/8/09 @ 7:15	"	"	"	108.5	PASS	Ally Broadstone
8/9/09 @ 7:15	"	"	"	109.0	PASS	Ally Broadstone
8/10/09 @ 7:15	"	"	"	106.0	PASS	Ally Broadstone
8/11/09 @ 7:15	"	"	"	105.9	Pass	Ally Broadstone
8/12/09 @ 06:55	"	"	"	104.6	PASS	[signature]

Maintenance Performed:

68

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Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: Soil Sampling EC logging

Equipment Description: Thermo OVM 580B

Equipment ID: U55877X

Equipment Serial No.: 62647 - 336

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8/4 7:37 AM	Isobutylene	100 ppm	09-3732 11/27/10	99.9	Pass	[signature]
8/5/09 07:20am	"	"	"	97.7	Pass	[signature]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations
CDM

Bo/Kysie

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site
Activity: MW Sampling
Equipment Description: Horiba U-52
Equipment ID: U5781IX
Equipment Serial No.:

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
6/15/2010 10:55	pH NTU mS/cm mg/L	4.0 0.0 4.49 8.78	-	3.95 0.0 4.51 8.59	Pass	[signature]
6/15/10 1100	ORP	234	-	234	P	[signature]
~~pH~~ 6/16/10 0700	pH	4.0	-	3.94	P	
"	cond	~~4.50~~ 4.49	-	4.52	P	
"	Turb	0.0	-	0.4	P	
"	DO	~~7.5~~ 8.0	-	7.59	P	
"	ORP	231	-	230	P	

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

Bo / Kyrie

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: MW Sampling

Equipment Description: Horiba U-52

Equipment ID: U57811X

Equipment Serial No.: NA

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
0700 6/17/10	pH	4.0	3-12-11	3.93	P	[illegible]
"	cond mS/cm	4.5	3-12-11	4.51	P	
"	Turb NTU	0.0	3-12-11	0.2	P	
"	DO ~~mg/L~~ mg/L	8.0	3-12-11	7.50	P	
"	ORP mV	230	3-12-11	230	P	
6/18/10 0720	~~8.~~ pH	~~3~~4.0	3-12-11	3.93	P	
	cond	4.49	3-12-11	4.61	P	
	Turb	0	3-12-11	0	P	
	DO mg/L	8.50	3-12-11	8.23	P	
	ORP mV	231	3-12-11	231	P	

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

Bo/Kyrie

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: GW MW Sampling

Equipment Description: Horiba U-52

Equipment ID: U57811X

Equipment Serial No.: NA

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
0700 6/19/10	pH	4.0	3-12-11	4.0	P	[signature]
	cond	4.49	"	4.5		
	Turb	0.0	"	0.2		
	DO	8.50	"	8.13		
	ORP	234	"	234		
0700 6/20/10	pH	4.0	"	3.93		
	cond	4.49	"	4.52		
	Turb	0.0	"	0.0		
	DO	8.50	"	8.70		
	ORP	237.5	"	237		

Maintenance Performed:

Andrea/Justin

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: MW Sampling

Equipment Description: U-52 (Horiba)

Equipment ID: U 57442X

Equipment Serial No.: NA

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
6-15-10 1405	pH	4.0	3-12-11	4.00	pass	
	Conductivity	4.49 mS/cm		4.49	pass	
	Turb	0.0 NTU		0.0	pass	
6-15-10	ORP	234 mV		234 mV	pass	
6-16-10	pH	4.0		4.0	pass	
	Conductivity	4.49 mS/cm		4.49	pass	
	Turb	0.0		0.1	pass	
	ORP	237 mV		237	pass	

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Andrea / Justin

Contract/Project: Garvey Elevator Site

Activity: MW Sampling

Equipment Description: U-52 (Horiba)

Equipment ID: U57442X

Equipment Serial No.: NA

	Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
6/17	pH		4.0	3-12-11	4.0	pass	[signature]
6/17	Cond.		4.5 mS/cm	↓	4.5	pass	[signature]
6/17	Turb		0.0 NTU		0.0	pass	[signature]
↓	DO		8.0 mg/L		8.5	pass	[signature]
↓	ORP		230 mV		230	pass	[signature]
	6/18	pH	4.0		4.00	pass	[signature]
	↓	Cond	4.5		4.52	pass	[signature]
	↓	Turb	0.0		0.0	pass	[signature]
	↓	DO	8.0		8.40	pass	[signature]
	↓	ORP	230	↓	230	pass	[signature]

Maintenance Performed:

HGL HydroGeoLogic, Inc. Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: MW Sampling

Justin Andred

Equipment Description: U-52 Horiba

Equipment ID: U574422

Equipment Serial No.: NA

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
6/19	pH	4.00	3-12-10	4.00	pass	
↓	Cond	4.49	↓	4.49	pass	
	Turb	~~85~~ 0.0		0.2	pass	
	DO	~~234~~ 8.5		8.71	pass	
	ORP	234		234	pass	
6/20	pH	4.00		4.00	pass	
	Cond	4.49		4.49	pass	
	Turb	0.0		0.0	pass	
	DO	8.5		9.01	pass	
	ORP	234		234	pass	

Maintenance Performed:

HGL HydroGeoLogic Inc
Exceeding Expectations

CDM

EQUIPMENT MAINTENANCE AND CALIBRATION RECORD

Contract/Project: Garvey Elevator Site

Activity: Groundwater Sampling

Equipment Description: YSI 556

Equipment ID:

Equipment Serial No.: U3097X

Calibration Date/Time	Parameter	Standard Used (Concentration)	Lot Control No./ Expiration Date	Post Calibration Reading	Comments Pass/Fail	Signature
8-7-09 0955	Conductivity	1,409 mS/cm		1,418	Pass	
	pH	4.00		4.05	Pass	
	pH	7.00		7.08	Pass	
	ORP	226.5		228.3	Pass	
~~8-7-09~~						
8-9-09 1215	Conductivity	1,409 mS/cm		1,246	Pass	
	pH	4.00		4.02	Pass	
	pH	7.00		6.99	Pass	
	ORP	226.5		226.4	Pass	

Maintenance Performed:

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APPENDIX K

MONITORING WELL PURGE SHEETS

BASELINE MONITORING WELL SAMPLING
JUNE 2010

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-1A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 111.80

Analytical Parameters: VOCs

Final Water Level (feet btoc): 111.78

QC Samples Collected: None

Purge Start Time: 835

Sample Number: 4931-22

Sample Time: 0855

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
836	111.80	15.74	6.94	0.826	8.70	156	1.8	180	
839	111.80	15.40	6.96	0.810	8.81	150	1.8		
841	111.78	15.18	6.96	0.801	8.99	143	1.4		
844	111.78	15.10	6.96	0.797	8.97	139	0.9		
847	111.78	15.00	6.96	0.795	8.82	137	0.0		
850	111.78	14.98	6.95	0.794	9.11	137	0.0		
853	111.78	15.06	6.96	0.792	8.90	135	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/18/10

OVM: FID ☐ PID ☐ **In Casing (ppm):** (Initial) ____ (Vented to) atmosphere

Well ID: MW2A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 115.23

Analytical Parameters: VOCs

Final Water Level (feet btoc): 115.24

QC Samples Collected: None

Purge Start Time: 1235

Sample Number: 4931-23

Sample Time: 1257

Controller Settings: Recharge: 10 secs **Discharge:** 6 secs **Pressure:** 120 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1238	115.23	18.47	6.91	0.713	5.98	129	5.0	180	
1241	115.23	17.08	6.84	0.711	5.67	131	4.1		
1244	115.24	16.40	6.78	0.697	5.13	131	2.2		
1247	115.24	15.99	6.74	0.692	5.22	132	0.9		
1250	115.24	16.07	6.71	0.698	5.29	134	0.0		
1253	115.24	15.94	6.71	0.698	5.34	135	0.0		
1256	115.24	16.02	6.70	0.698	5.50	135	0.0		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/19/10

OVM: FID G PID G **In Casing (ppm):** (Initial) ____ (Vented to) atmosphere

Well ID: MW-3A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 121.15

Analytical Parameters: VOCs/ALK/Chloride/MEE/Nitrate-Nitrite/Sulfate

Final Water Level (feet btoc): 121.15

QC Samples Collected: None

Purge Start Time: 930

Sample Number: 4931-5

Sample Time: 1000

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 90 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
942	121.15	14.93	7.00	0.842	10.63	165	0.0	200	
945	121.15	14.83	7.01	0.842	9.98	155	0.0		
948	121.15	14.81	7.01	0.844	9.56	151	0.0		
951	121.15	14.80	7.00	0.841	10.01	149	0.0		
954	121.15	14.83	7.01	0.841	9.67	147	0.0		
957	121.15	14.83	7.01	0.841	10.04	145	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/~~18~~ 9/10 AF

Well ID: MW-3B

Initial Static Water Level (feet btoc): 120.89

Final Water Level (feet btoc): 120.90

Purge Start Time: 11~~2~~00 AF

Sample Time: 1120

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) ____________ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs/Alk/Chloride/MEE/Nitrate-Nitrite/Sulfate/TOC/TSS TDS/Total Phos

QC Samples Collected: Field Duplicate

Sample Number: 4931-6

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 120 psi

Cycles Per Minute: 5

	Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1102	~~1202~~	120.89	17.64	7.00	0.864	8.72	138	0.0	220	
1105	~~1205~~	120.90	16.53	7.00	0.876	8.94	136	0.0	↓	
1108	~~1208~~	120.90	16.25	7.00	0.881	9.08	136	0.0		
1111	~~1211~~	120.90	16.06	6.99	0.884	9.06	135	0.0		
1114	~~1214~~	120.90	15.93	7.01	0.884	9.21	135	0.0		
1117	~~1217~~	120.90	15.94	6.99	0.886	9.20	135	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/19/10

OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) ____ (Vented to) atmosphere

Well ID: MW-3D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 119.45

Analytical Parameters: VOCs/Alk/Chloride/MEE/Nitrate-Nitrite/Sulfate/TOC/TSS TDS/Total Phos

Final Water Level (feet btoc): 119.45

QC Samples Collected: MS/MSD

Purge Start Time: 1250

Sample Number: 4931-8

Sample Time: 1320

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 135 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. ms ~~(µs/cm)~~	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1250	119.45	16.88	7.21	0.714	4.22	118	0.0	180	
1253	119.45	16.40	7.20	0.713	4.19	118	0.0	↓	
1256	119.45	15.91	7.18	0.709	4.12	121	0.0		
1259	119.45	15.70	7.22	0.711	4.32	120	0.0		
1302	119.45	15.83	7.21	0.705	4.76	119	0.0		
1305	119.45	15.67	7.20	0.696	5.21	120	0.0		
1308	119.45	15.62	7.20	0.684	5.92	121	0.0		
1311	119.45	15.72	7.18	0.678	6.82	120	0.0		
1314	119.45	15.66	7.13	0.667	6.76	122	0.0		
1317	119.45	15.67	7.13	0.666	6.87	121	0.0	↓	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

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CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/19/10

Well ID: MW-3E

Initial Static Water Level (feet btoc): 118.40

Final Water Level (feet btoc): 118.40

Purge Start Time: 1520

Sample Time: 1554

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCS/ALK/Chloride/MEE/Nitrate-Nitrite/Sulfate

QC Samples Collected: None

Sample Number: 4931-9

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 150 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1522	118.40	19.09	7.57	0.504	4.59	-60	0.0	150	
1525	118.40	19.00	7.68	0.510	4.93	-38	0.0		
1528	118.40	18.20	7.75	0.510	4.09	-5	0.0		
1531	118.40	18.08	7.76	0.511	4.05	17	0.0		
1534	118.40	17.86	7.77	0.508	4.11	32	0.0		
1537	118.40	17.98	7.76	0.511	4.42	43	0.0		
1540	118.40	17.52	7.80	0.514	4.33	50	0.0		
1543	118.40	17.55	7.79	0.517	4.35	56	0.0		
1546	118.40	17.56	7.82	0.536	4.42	60	0.0		
1549	118.40	17.50	7.82	0.541	4.52	62	0.0		
1552	118.40	17.43	7.84	0.547	4.49	65	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/18/10

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ (Vented to) atmosphere

Well ID: MW-4A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 118.25

Analytical Parameters: VOCs

Final Water Level (feet btoc): 118.27

QC Samples Collected: None

Purge Start Time: 1717

Sample Number: 4931-27

Sample Time: 1743

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** ~~80~~ 100 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1720	118.25	15.60	7.05	0.890	9.91	154	17.8	300	
1723	118.26	15.46	7.08	0.876	9.02	157	14.2		
1726	118.27	14.88	7.07	0.866	9.11	160	6.7		
1729	118.27	14.84	7.05	0.865	9.09	161	3.7		
1732	118.27	14.76	7.06	0.866	9.27	161	1.4		
1735	118.27	14.81	7.06	0.866	9.22	162	0.4		
1738	118.27	15.01	7.06	0.865	9.33	162	0.4		
1741	118.27	15.32	7.07	0.863	9.35	162	0.4		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/18/10

OVM: FID G PID G **In Casing (ppm): (Initial)** ____ **(Vented to)** atmosphere

Well ID: MW-4B

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 118.20

Analytical Parameters: VOCs

Final Water Level (feet btoc): 118.20

QC Samples Collected: None

Purge Start Time: 1830

Sample Number: 4931-28

Sample Time: 1910

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 90 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1833	118.20	17.24	7.01	0.880	9.38	149	44.3	200	
1836	118.20	16.23	7.06	0.878	8.49	150	106		
1839	118.20	15.78	7.07	0.877	8.19	152	147		
1842	118.20	15.56	7.06	0.877	8.36	153	194		
1845	118.20	15.44	7.06	0.874	8.42	153	212		
1848	118.20	15.54	7.05	0.873	8.39	154	170		
1851	118.20	15.49	7.06	0.874	8.70	154	108		
1854	118.20	15.47	7.06	0.873	8.62	155	74.6		
1857	118.20	15.24	7.07	0.876	8.92	155	45.1		
1900	118.20	15.12	7.07	0.875	8.72	155	34.0		
1903	118.20	15.25	7.07	0.873	8.99	156	27.5		
1906	118.20	15.11	7.07	0.875	9.02	156	26.9		
1909	118.20	15.07	7.07	0.873	8.88	157	26.5		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/20/10

Well ID: MW-5A

Initial Static Water Level (feet btoc): 116.92

Final Water Level (feet btoc): 116.91

Purge Start Time: 920

Sample Time: 0940

Samplers= Signatures: AF JN

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4931-32

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 105 **psi**

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (ms/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
921	116.92	14.26	7.05	0.826	13.51	125	1.2	300	
924	116.92	14.03	7.07	0.823	13.15	126	0.6	↓	
927	116.91	13.90	7.06	0.824	12.15	123	0.0		
930	116.91	13.90	7.06	0.825	12.40	125	0.0		
933	116.91	13.78	7.06	0.827	12.37	124	0.0		
936	116.91	13.76	7.06	0.826	12.21	125	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/20/10

OVM: FID ☐ PID ☐ **In Casing (ppm):** **(Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-5B

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 118.10

Analytical Parameters: VOC

Final Water Level (feet btoc): 118.10

QC Samples Collected: Field Duplicate

Purge Start Time: 810

Sample Number: 4931-30/4931-30-FD

Sample Time: 0832/0835

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 115 **psi**

Samplers= Signatures: AF/JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
811	118.10	13.98	6.91	0.918	11.99	162	0.0	350	
816	118.10	13.62	7.00	0.908	11.78	141	0.0		
819	118.10	13.63	6.99	0.906	11.32	137	0.0		
824	118.10	13.57	7.00	0.906	10.62	133	0.0		
827	118.10	13.52	6.99	0.905	10.81	132	0.0		
830	118.10	13.50	7.00	0.905	10.99	131	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/20/10

Well ID: MW-5D

Initial Static Water Level (feet btoc): 118.13

Final Water Level (feet btoc): 118.13

Purge Start Time: 1030

Sample Time: 1117

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4931-33

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. mS (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1037	118.13	16.31	7.18	0.570	8.85	116	95.9	100	
1040	118.13	16.19	7.09	0.584	8.00	122	91.8		
1043	118.13	16.13	7.06	0.592	8.92	123	76.5		
1046	118.13	15.74	7.02	0.592	9.79	126	57.5		
1049	118.13	15.36	7.03	0.594	9.96	127	41.1		
1052	118.13	15.03	7.01	0.594	10.12	127	33.3		
1055	118.13	14.97	7.01	0.591	10.42	128	10.9		
1058	118.13	15.00	7.01	0.590	10.55	128	6.9		
1101	118.13	14.97	7.04	0.589	10.39	128	4.6		
1104	118.13	15.07	7.01	0.587	10.27	129	2.1		
1107	118.13	15.01	7.04	0.588	9.94	129	0.8		
1110	118.13	15.05	7.01	0.587	10.13	128	0.0		
1113	118.13	15.07	7.01	0.585	10.19	130	0.0		
1116	118.13	15.17	7.01	0.583	10.30	129	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/20/10

Well ID: MW-6A

Initial Static Water Level (feet btoc): 117.80

Final Water Level (feet btoc): 117.80

Purge Start Time: 1420

Sample Time: 1440

Samplers= Signatures: AF JN

OVM: FID G PID G **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4931-36

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 90 **psi**

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1422	11~~8~~7.80	16.59	6.98	0.831	8.73	126	0.0	200	
1425	11~~8~~7.80	15.76	6.97	0.832	8.63	127	0.0		
1428	117.80	15.41	6.96	0.832	8.97	129	0.0		
1431	117.80	15.25	6.96	0.833	9.82	129	0.0		
1434	117.80	15.23	6.95	0.833	9.91	130	0.0		
1437	117.80	15.16	6.95	0.833	9.72	131	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/20/10

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-6D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 117.86

Analytical Parameters: VOCS

Final Water Level (feet btoc): 117.86

QC Samples Collected: Duplicate

Purge Start Time: 1255

Sample Number: 4931-34/4931-34FD

Sample Time: 1334/1339

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 120 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1258	117.86	17.40	7.08	0.536	7.15	120	1.6	160	
1301	117.86	16.76	7.09	0.540	7.08	121	2.6		
1304	117.86	16.57	7.08	0.542	7.56	122	3.1		
1307	117.86	16.52	7.08	0.539	7.77	122	4.1		
1310	117.86	16.70	7.05	0.539	7.52	122	4.9		
1313	117.86	16.58	7.07	0.540	7.82	123	6.2		
1316	117.86	16.60	7.05	0.541	7.67	123	8.2		
1319	117.86	16.40	7.05	0.542	7.52	123	9.2		
1322	117.86	16.46	7.06	0.543	7.36	125	11.0		
1325	117.86	16.42	7.04	0.542	7.19	124	12.9		
1328	117.86	16.36	7.05	0.541	7.35	124	14.9		
1331	117.86	16.23	7.04	0.542	7.41	124	15.0		
1334	117.86	16.34	7.06	0.542	7.50	126	15.2		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/20/10

Well ID: MW-6E

Initial Static Water Level (feet btoc): 118.72

Final Water Level (feet btoc): 118.72

Purge Start Time: 1605

Sample Time: 1623

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4931-37

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 145 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. mS (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1605	118.72	20.05	7.48	0.326	3.94	105	8.8	150	
1608	118.72	19.42	7.42	0.316	3.31	105	7.7	↓	
1611	118.72	18.57	7.36	0.318	2.60	106	7.0		
1614	118.72	18.52	7.37	0.317	2.38	107	7.3		
1617	118.72	18.31	7.34	0.317	2.37	105	7.4		
1620	118.72	18.24	7.33	0.317	2.35	105	7.6		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/17/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-7A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 108.10

Analytical Parameters: VOCs

Final Water Level (feet btoc): 108.09

QC Samples Collected: None

Purge Start Time: 1230

Sample Number: 4931-19

Sample Time: 1250

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 80 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1231	108.10	15.21	7.04	0.790	9.63	37	0.0	350	
1234	108.09	14.76	7.02	0.786	10.74	43	0.0		
1237	108.09	14.46	7.02	0.786	11.66	47	0.0		
1240	108.09	14.37	7.02	0.790	10.32	51	0.0		
1243	108.09	14.41	7.00	0.787	9.65	53	0.0		
1246	108.10	14.30	7.00	0.782	9.69	55	0.0		
1249	108.09	14.33	7.01	0.782	9.25	57	0.0		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/17/10

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ **(Vented to)** atmosphere

Well ID: MW-7B

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 108.75

Analytical Parameters: VOCs

Final Water Level (feet btoc): 108.75

QC Samples Collected: None

Purge Start Time: 1532

Sample Number: 4931-20

Sample Time: 1550

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 80 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1534	108.75	19.18	7.05	0.870	8.07	45	0.0	250	
1537	104.75	17.51	7.01	0.808	7.99	52	0.0	↓	
1540	108.75	16.40	6.99	0.801	7.99	57	0.0		
1543	108.75	15.73	6.95	0.796	7.92	61	0.0		
1546	108.75	15.40	6.94	0.795	7.94	65	0.0		
1549	108.75	15.20	6.93	0.795	7.78	66	0.0		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/10

OVM: FID G PID G In Casing (ppm): (Initial) ____ (Vented to) atmosphere

Well ID: MW8A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 125.88

Analytical Parameters: VOCs/Alk/chloride/MEE/Nitrate-Nitrite/sulfate

Final Water Level (feet btoc): 12588

QC Samples Collected: None

Purge Start Time: 1005

Sample Number: 4931-4

Sample Time: 1027

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 105 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ ms/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1010	125.88	14.80	7.16	1.34	11.08	120	0.5	200	
1013	125.88	14.30	7.15	1.35	10.92	121	0.1		
1016	125.88	14.12	7.12	1.35	10.53	121	0.0		
1019	125.88	14.01	7.10	1.36	10.42	122	0.0		
1022	125.88	14.03	7.09	1.36	10.10	123	0.0		
1025	125.88	13.99	7.07	1.37	9.97	123	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/17/10

Well ID: MW-9A

Initial Static Water Level (feet btoc): 111.41

Final Water Level (feet btoc): 111.43

Purge Start Time: 1733

Sample Time: 1755

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4931-21

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psi

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1735	111.41	20.39	7.14	0.665	9.01	57	0.0	150	
1738	111.43	19.01	7.18	0.740	9.18	55	0.0		
1741	111.43	18.11	7.19	0.802	9.24	58	0.0		
1744	111.43	17.58	7.22	0.848	9.27	61	0.0		
1747	111.43	17.02	7.23	0.883	9.37	63	0.0		
1750	111.43	16.87	7.24	0.890	9.37	66	0.0		
1753	111.43	16.88	7.26	0.892	9.26	66	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/18/10

OVM: FID G PID G **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Well ID: MW13C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 118.01

Analytical Parameters: VOCs

Final Water Level (feet btoc): 118.03

QC Samples Collected: Field Duplicate

Purge Start Time: 1400

Sample Number: 4931-24 and 4931-24-FD

Sample Time: 1422

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 100 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. ~~µS~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1405	118.01	17.03	7.25	0.658	9.99	108	0.0	150	
1408	118.02	16.64	7.23	0.659	10.32	110	0.0	↓	
1411	118.02	16.08	7.20	0.660	10.03	112	0.0		
1414	118.03	15.99	7.19	0.661	10.13	113	0.0		
1417	118.03	15.93	7.18	0.661	10.07	116	0.0		
1420	118.03	15.84	7.18	0.662	10.22	118	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-13E

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 117.23

Analytical Parameters: VOCs

Final Water Level (feet btoc): 117.23

QC Samples Collected: None

Purge Start Time: ~~16~~ 1530

Sample Number: 4931-26

Sample Time: 1550

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 150 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1532	117.23	24.91	7.41	0.374	5.21	120	31.0	100	
1535	117.23	22.98	7.41	0.401	5.42	124	30.2	↓	
1538	117.23	21.79	7.41	0.419	5.55	126	28.8		
1541	117.23	21.23	7.40	0.431	5.88	129	29.5		
1544	117.23	20.95	7.41	0.434	5.88	129	30.6		
1547	117.23	20.62	7.42	0.442	5.81	130	29.9		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: ____________

OVM: FID G PID G In Casing (ppm): (Initial) ____________ (Vented to) atmosphere

Well ID: MW9 A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ____________

Analytical Parameters: VOCs

Final Water Level (feet btoc): ____________

QC Samples Collected: None

Purge Start Time: 845

Sample Number: 4931-17

Sample Time: 0916

Controller Settings: Recharge: 6 secs Discharge: 4 secs Pressure: 120 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
855		17.05	7.39	1.01	0.51	-49	0.0	150	
858		16.82	7.23	1.01	2.67	-17	0.0		
901		16.77	7.16	1.01	4.00	3	0.0		
904		16.74	7.14	1.01	4.52	12	0.0		
907		16.73	7.12	1.01	4.82	20	0.0		
910		16.75	7.11	1.01	4.35	29	0.0		
912		16.77	7.11	1.01	4.48	32	0.0		
915		16.84	7.11	1.01	4.49	34	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/17/10

Well ID: MW20C19

Initial Static Water Level (feet btoc): AF 6/17/10

Final Water Level (feet btoc):

Purge Start Time: 8:00

Sample Time: 0827

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: MS/MSD

Sample Number: 4931-16

Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 110 psi

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ ms/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
807		16.26	6.59	0.725	3.29	-26	0.0	200	
810		16.14	6.81	0.732	6.09	-10	0.0		
813		16.11	6.86	0.736	6.66	2	0.0		
816		16.09	6.88	0.737	7.40	13	0.0		
820		16.13	6.88	0.737	7.85	19	0.0		
823 ~~824~~		16.16	6.89	0.738	7.54	27	0.0		
826		16.19	6.89	0.738	7.86	32	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/17/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW20A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ______

Analytical Parameters: VOCs

Final Water Level (feet btoc): ______

QC Samples Collected: None

Purge Start Time: 1015

Sample Number: 4931-18

Sample Time: 1037

Controller Settings: Recharge: 4 secs Discharge: 3 secs Pressure: 60 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1018		17.48	8.41	0.770	0.00	-305	0.70	100	
1021		17.46	8.40	0.770	0.00	-305	0.80	↓	
1024		17.52	8.41	0.768	0.00	-308	1.4		
1027		17.56	8.42	0.764	0.00	-310	1.3		
1030		17.52	8.41	0.770	0.00	-313	1.6		
1033		17.58	8.41	0.766	0.00	-314	1.7		
1036		17.56	8.41	0.767	0.00	-316	1.6		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-20C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ______

Analytical Parameters: VOCs

Final Water Level (feet btoc): ______

QC Samples Collected: None

Purge Start Time: 1710

Sample Number: 4931-14

Sample Time: 1730

Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 105 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~µs~~ ms/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
~~1710~~ 1712		18.30	6.89	0.611	0.00	-211	5.4	200	
1715		18.33	6.95	0.608	0.00	-231	6.7		
1718		18.28	6.98	0.605	0.00	-238	7.4		
1721		18.21	7.02	0.605	0.00	-245	6.9		
1724		18.06	7.04	0.600	0.00	-247	6.7		
1727		17.99	7.06	0.597	0.00	-249	6.5		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/16/10

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ **(Vented to)** atmosphere

Well ID: MW20D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ______

Analytical Parameters: VOCs

Final Water Level (feet btoc): ______

QC Samples Collected: None

Purge Start Time: 1625

Sample Number: 4931-13

Sample Time: 1655

Controller Settings: Recharge: 6 **secs Discharge:** 7 **secs Pressure:** 105 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1629		18.00	6.69	0.598	1.46	-85	3.2	200	
1632		17.81	6.96	0.592	4.13	-70	1.3		
1635		17.65	7.30	0.589	5.29	-53	0.3		
1638		17.62	7.53	0.588	5.01	-34	0.1		
1641		17.65	7.68	0.587	5.05	-16	0.1		
1644		17.58	7.74	0.586	7.05	-5	0.1		
1647		17.75	7.79	0.585	5.02	1	0.1		
1650		17.77	7.82	0.584	5.03	5	0.1		
1653		17.63	7.85	0.583	5.44	8	0.1		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/10

Well ID: MW20E

Initial Static Water Level (feet btoc):

Final Water Level (feet btoc):

Purge Start Time: 1837

Sample Time: 1855

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4931-15

Controller Settings: Recharge: 9.5 secs Discharge: 5.5 secs Pressure: 125 psi

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (ms/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1837		17.93	7.85	0.575	5.51	-12	0.2	180	
1840		17.35	7.70	0.568	6.39	-4	0.0		
1843		16.04	7.72	0.573	7.25	0	0.0		
1846		16.73	7.83	0.568	6.75	-1	0.0		
1849		16.69	7.91	0.566	6.41	0	0.0		
1852		16.62	7.95	0.555	6.04	0.	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/10

Well ID: MW-30A

Initial Static Water Level (feet btoc):

Final Water Level (feet btoc):

Purge Start Time: ~~1300~~ JN 1320

Sample Time: 1345

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs/Alk/Chloride/MEE/Nitrate-Nitrite/Sulfate/TOC +TSS/TDS/Total Phos

QC Samples Collected: None

Sample Number: 4931-3

Controller Settings: Recharge: 6.1 secs Discharge: 3.0 secs Pressure: 100 psi

Cycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1323		15.84	7.99	0.760	0.00	-148	0.4	150	
1326		15.80	8.01	0.767	0.00	-144	0.6	↓	
1329		15.89	8.02	0.760	0.0	-140	0.5		
1332		15.76	8.03	0.771	0.0	-138	1.1		
1335		15.81	8.03	0.740	0.0	-138	0.5		
1338		15.89	8.05	0.774	0.0	-140	0.6		
1341		15.97	8.06	0.778	0.0	-141	0.5		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-30C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ______

Analytical Parameters: VOCs/Alk/Sulfate/MEE/Nitrate-Nitrite/Sulfate/TOC/TSS TDS/Total Phos

Final Water Level (feet btoc): ______

QC Samples Collected: None

Purge Start Time: 1015

Sample Number: 4931-2

Sample Time: 1103

Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 100 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1035		17.61	7.11	0.659	8.65	-131	2.0	200	
1038		17.01	7.41	0.650	8.98	-103	2.3		
1041		16.80	7.65	0.643	9.30	-67	3.1		
1044		16.71	7.74	0.640	9.57	-53	3.5		
1047		16.68	7.81	0.630	9.46	-41	3.2		
1050		16.82	7.84	0.622	9.46	-35	2.7		
1053		16.80	7.87	0.627	9.68	-30	2.7		
1056		16.65	7.87	0.624	9.91	-35	1.6		
1059		16.68	7.89	0.619	9.97	-28	1.6		
1102		16.72	7.90	0.617	9.90	-27	1.5		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/10
OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-30D
Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ______
Analytical Parameters: VOCs, MEE, TOC, TP, NFS, TDS, Anions, Alk, Nitrogen/Nitrate/Nitrite

Final Water Level (feet btoc): ______
QC Samples Collected: None

Purge Start Time: 8:40
Sample Number: 4931-1

Sample Time: 0930
Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 100 psi

Samplers= Signatures: AF JN
Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
851		14.66	6.72	0.683	0.0	-258	12.8	200	
854		14.80	6.84	0.674	0.0	-255	13.2		
857		14.97	6.89	0.671	0.0	-221	12.8		
900		15.11	6.95	0.665	0.59	-189	10.7		
903		15.19	7.02	0.663	2.31	-177	8.0		
906		15.18	7.06	0.659	1.99	-161	7.0		
909		15.25	7.06	0.655	1.82	-158	7.1		
912		15.37	7.10	0.648	2.18	-151	7.2		
915		15.36	7.08	0.644	2.48	-153	6.3		
918		15.52	7.10	0.642	2.71	-148	6.6		
921		15.39	7.13	0.652	2.93	-144	5.5		
924		15.50	7.15	0.657	3.09	-144	5.3		
927		15.62	7.17	0.651	3.34	-136	5.7		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/10

Well ID: MW30E

Initial Static Water Level (feet btoc):

Final Water Level (feet btoc):

Purge Start Time: 0810

Sample Time: 0832

Samplers= Signatures:

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: ~~49RF~~

Sample Number: 4931-12

Controller Settings: Recharge: ~~5.2~~ 6.0 secs Discharge: ~~6.5~~ 7.0 secs Pressure: ~~165~~ 168 psi

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (~~μS~~ mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0813		14.98	6.70	0.625	6.05	-124	1.1	180	
0816		14.71	7.09	0.612	6.70	-90	0.0	180	
0819		14.71	7.23	0.605	7.50	-93	0.0	180	
0822		14.48	7.24	0.602	7.71	-101	0.0	200	
0825		14.42	7.37	0.597	7.88	-90	0.1	200	
0828		14.41	7.38	0.595	8.09	-95	0.1	200	
0831		14.67	7.48	0.587	7.84	-92	0.2	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/15/10

Well ID: MW30A AF 6/15/10

Initial Static Water Level (feet btoc):

Final Water Level (feet btoc):

Purge Start Time: 1720

Sample Time: 1747

Samplers= Signatures: AF JN

OVM: FID G PID G In Casing (ppm): (Initial) (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOC

QC Samples Collected: None

Sample Number: 4391-11

Controller Settings: Recharge: 8.0 secs Discharge: 4.0 secs Pressure: 80 psi

Cycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1725		17.22	7.33	0.891	0.00	-256	1.7	160	
1728		16.71	7.10	0.886	0.00	-255	0.9		
1731		16.96	7.05	0.890	0.0	-258	1.9		
1734		16.73	7.02	0.889	0.0	-264	1.8		
1737		16.70	6.98	0.891	0.0	-277	3.1		
1740		16.53	6.95	0.893	0.0	-283	3.0		
1743		16.42	6.95	0.894	0.0	-288	3.2		
1746		16.67	6.94	0.893	0.0	-289	3. ~~4~~3 AF 6/15/10		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/15/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW31C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): ______

Analytical Parameters: VOCs

Final Water Level (feet btoc): ______

QC Samples Collected: None

Purge Start Time: 1555

Sample Number: 4931-10

Sample Time: 1648

Controller Settings: Recharge: 4.8 secs Discharge: 5.1 secs Pressure: 80 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 6

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1606		18.40	6.22	0.430	5.26	-7	0.3	100	
1609		17.77	6.61	0.403	6.06	-21	0.0	100	
1612		17.29	6.78	0.394	6.48	-24	0.0	100	
1615		15.91	6.93	0.388	6.82	-20	0.0	200	
1618		15.35	6.98	0.388	6.90	-19	0.0	200	
1621		15.14	7.03	0.385	6.94	-12	0.0	200	
1624		14.91	7.05	0.383	6.92	-7	0.0	200	
1627		14.78	7.06	0.382	6.85	-2	0.0	200	
1630		15.00	7.07	0.383	6.79	2	0.0	200	
1633		15.01	7.08	0.384	6.84	6	0.0	200	
1636		14.83	7.08	0.383	6.79	9	0.0	200	
1639		14.91	7.09	0.382	6.70	12	0.0	200	
1642		15.19	7.09	0.381	6.58	16	0.0	200	
1645		15.05	7.10	0.381	6.65	19	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/21/10

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-10A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 108.81

Analytical Parameters: VOCs

Final Water Level (feet btoc): 108.81

QC Samples Collected: None

Purge Start Time: 1201

Sample Number: 4932-32

Sample Time: 1220

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 95 psi

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1203	108.81	20.06	7.04	0.842	8.40	128	11.3	200	
1206	108.81	19.08	7.09	0.863	8.69	133	6.7		
1209	108.81	18.26	7.07	0.865	8.52	140	5.9		
1212	108.81	18.13	7.08	0.867	8.33	136	5.7		
1215	108.81	18.73	7.08	0.867	8.26	133	6.1		
1218	108.81	18.72	7.05	0.866	8.17	132	6.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/21/10

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ **(Vented to)** atmosphere

Well ID: MW-10B

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 109.68

Analytical Parameters: VOCs

Final Water Level (feet btoc): 109.70

QC Samples Collected: None

Purge Start Time: 1116

Sample Number: 4932-31

Sample Time: 1134

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 95 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1117	109.78	17.00	6.79	0.785	9.92	156	0.0	200	
1120	109.78	15.71	7.00	0.791	9.40	153	0.0	↓	
1123	109.78	15.06	7.03	0.797	9.49	139	0.0	↓	
1126	109.78	14.94	7.02	0.797	9.21	136	0.0	↓	
1129	109.76	15.11	7.04	0.795	9.50	134	0.0	↓	
1132	109.70	15.04	7.03	0.799	9.37	132	0.0	↓	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/20/2010

OVM: FID G PID G **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-11A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 97.83

Analytical Parameters: VOCs

Final Water Level (feet btoc): 97.83

QC Samples Collected: None

Purge Start Time: 15:20

Sample Number: 4932-28

Sample Time: 15:40

Controller Settings: Recharge: 15 **secs Discharge:** 15 **secs Pressure:** 60 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:25	97.83	22.23	6.87	6740	2.59	246	15.0	150	
15:28	97.83	21.47	6.86	6810	2.82	254	7.7	150	
15:31	97.83	21.32	6.78	6950	2.86	262	0.0	150	
15:34	97.83	21.03	6.73	7030	2.97	265	0.0	150	
15:37	97.83	20.63	6.71	7050	2.96	272	0.0	150	
15:40	97.83	20.44	6.71	7070	2.91	274	0.0	150	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/19/2010 OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-12A Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 113.00 Analytical Parameters: VOCs

Final Water Level (feet btoc): 113.03 QC Samples Collected: None

Purge Start Time: 17:25 Sample Number: 4932-23

Sample Time: 17:53 Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 70 psi

Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
17:35	113.00	22.51	7.14	8970	5.14	210	0.0	200	
17:38	113.00	22.18	7.13	9020	3.76	215	0.0	200	
17:41	113.00	22.53	7.06	9320	3.79	223	0.0	200	
17:44	113.00	21.01	7.07	9690	4.78	228	0.0	200	
17:47	113.00	19.22	7.09	9700	4.83	234	0.0	200	
17:50	113.00	18.93	7.07	9660	4.88	235	0.0	200	
17:53	113.00	18.77	7.06	9630	4.83	235	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/19/2010

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-12C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 113.77

Analytical Parameters: VOCs

Final Water Level (feet btoc): ______

QC Samples Collected: 4932-21FD

Purge Start Time: 16:30

Sample Number: 4932-21

Sample Time: 16:57

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 90 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:39	113.77	26.56	6.84	5930	3.29	177	0.0	200	
16:42	113.77	20.25	6.93	6270	4.41	188	0.0	200	
16:45	113.77	19.99	6.88	6250	4.45	204	0.0	200	
16:48	113.77	19.32	6.84	6280	4.40	215	0.0	200	
16:51	113.77	19.27	6.84	6270	4.46	222	0.0	200	
16:54	113.77	19.08	6.84	6260	4.52	227	0.0	200	
16:57	113.77	19.16	6.80	6280	4.44	232	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/19/2010

Well ID: MW-12D

Initial Static Water Level (feet btoc): 112.91

Final Water Level (feet btoc): 112.98

Purge Start Time: 14:45

Sample Time: 15:11

Samplers= Signatures: KJ, WJM

OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) ____ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs, TOC

QC Samples Collected: None

Sample Number: 4932-18

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 110 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
14:53	113.01	28.84	7.28	4570	3.96	143	0.0	250	
14:56	113.01	24.24	7.05	4590	3.76	165	19.0	250	
14:59	113.01	20.69	7.04	4640	3.24	169	24.3	250	
15:02	113.01	21.54	6.84	4670	2.75	179	24.3	200	
15:05	113.01	21.07	6.87	4690	2.62	180	19.5	200	
15:08	113.01	21.29	6.91	4700	2.61	180	19.9	200	
15:11	113.01	21.11	6.95	4680	2.49	184	20.2	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/21/2010

Well ID: MW-14A

Initial Static Water Level (feet btoc): 101.72

Final Water Level (feet btoc): 101.72

Purge Start Time: 11:15

Sample Time: 11:43

Samplers= Signatures: KJ, WM

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4932-37

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 60 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:25	101.72	24.08	6.39	8830	3.47	198	0.0	200	
11:28	101.72	23.71	6.66	8670	3.64	206	0.0	200	
11:31	101.72	23.38	6.67	8620	3.38	218	0.0	200	
11:34	101.72	23.15	6.70	8600	3.56	226	0.0	200	
11:37	101.72	23.20	6.69	8600	3.10	233	0.0	200	
11:40	101.72	23.28	6.71	8620	3.08	240	0.0	200	
11:43	101.72	23.62	6.70	8630	3.25	243	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/21/10

OVM: FID G PID G **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-16A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 108.63

Analytical Parameters: VOCs

Final Water Level (feet btoc): 108.63

QC Samples Collected: None

Purge Start Time: 841

Sample Number: 4932-29

Sample Time: 0900

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 95 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
841	108.63	14.40	6.80	0.910	8.24	188	0.0	250	
844	108.63	14.30	6.80	0.909	7.65	173	0.0		
847	108.63	14.28	6.83	0.911	7.15	161	0.0		
850	108.63	14.25	6.80	0.912	7.42	155	0.0		
853	108.63	14.22	6.82	0.913	7.09	150	0.0		
856	108.63	14.28	6.82	0.917	7.30	148	0.0		

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/21/10

OVM: FID ☐ PID ☐ **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-16C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 108.79

Analytical Parameters: VOCs

Final Water Level (feet btoc): 108.79

QC Samples Collected: None

Purge Start Time: 935

Sample Number: 4932-30

Sample Time: 0955

Controller Settings: Recharge: 7 **secs Discharge:** 6 **secs Pressure:** 110 **psi**

Samplers= Signatures: AF JN

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
939	108.79	15.43	6.83	0.785	11.60	156	0.0	200	
942	108.79	15.02	6.80	0.785	12.07	145	0.0	↓	
945	108.79	14.91	6.79	0.786	11.92	136	0.0	↓	
948	108.79	14.97	6.78	0.786	11.67	134	0.0	↓	
951	108.79	14.98	6.80	0.786	11.53	132	0.0	↓	
954	108.79	15.12	6.79	0.785	11.52	130	0.0	↓	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/16/2010

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ **(Vented to)** atmosphere

Well ID: MW-17A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 94.11

Analytical Parameters: VOCs

Final Water Level (feet btoc): 94.16

QC Samples Collected: None

Purge Start Time: 8:45

Sample Number: 4932-19

Sample Time: 9:16

Controller Settings: Recharge: 10 **secs Discharge:** 5 **secs Pressure:** 125 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:48	94.18	17.58	6.16	7810	6.21	280	0.0	200	Equipment Malfunction
8:58	94.18	17.78	6.63	6770	4.83	319	0.0	300	Resume Pumping
9:01	94.18	16.16	6.66	6790	5.41	327	0.0	300	
9:04	94.18	14.44	6.68	7460	5.66	333	0.0	300	
9:07	94.18	14.24	6.76	8000	5.56	334	0.0	300	
9:10	94.18	14.25	6.81	8260	5.57	336	0.0	300	
9:13	94.18	14.22	6.83	8420	5.58	339	0.0	300	
9:16	94.18	14.11	6.83	8420	5.62	342	0.0	300	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/2010

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-17C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 93.59

Analytical Parameters: VOCs

Final Water Level (feet btoc): 93.56

QC Samples Collected: 4932-20 FD

Purge Start Time: 12:20

Sample Number: 4932-20

Sample Time: 12:35

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 175 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:23	93.59	19.75	7.50	3600	0.04	290	10.7	300	
12:26	93.59	17.44	7.17	5600	0.05	321	151	300	
12:29	93.59	15.85	7.14	6240	0.03	329	218	300	
12:32	93.59	15.62	7.18	6340	0.04	328	215	300	
12:35	93.59	15.55	7.24	6410	0.02	327	198	300	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/16/2010

OVM: FID G PID G **In Casing (ppm):** (Initial) ____ (Vented to) atmosphere

Well ID: MW-17D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 93.55

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs

Final Water Level (feet btoc): 93.51

QC Samples Collected: ____

Purge Start Time: 10:00

Sample Number: 4932-13

Sample Time: 10:56

Controller Settings: Recharge: 20 secs **Discharge:** 10 secs **Pressure:** 175 psi

Samplers= Signatures: KJ, LWM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:05	93.55	16.98	7.04	7490	4.80	344	0.0	300	
10:08	93.55	16.63	7.10	5080	4.13	344	166	300	
10:11	94.6	16.44	7.12	3630	3.18	345	226	300	
10:14	94.6	16.22	7.13	3340	2.77	345	260	300	
10:17	94.6	16.58	7.16	3010	1.70	346	172	300	
10:20	94.6	16.76	7.16	2950	1.16	345	144	300	
10:23	94.6	16.80	7.19	2910	0.74	343	118	300	
10:26	94.6	16.87	7.22	2890	0.43	340	94.7	300	
10:29	94.6	17.10	7.26	2880	0.13	336	74.7	300	
10:32	94.6	17.18	7.30	2880	0.00	333	61.3	300	
10:35	94.6	17.24	7.33	2880	0.00	329	53.0	300	
10:38	94.6	17.37	7.39	2860	0.00	326	47.9	300	
10:41	94.6	17.43	7.44	2870	0.00	320	41.5	300	
10:44	94.6	17.37	7.45	2860	0.00	318	36.6	300	
10:47	94.6	17.58	7.48	2850	0.00	314	34.1	300	
10:50	94.6	17.66	7.51	2850	0.00	~~312~~	30.1	300	
10:53	94.6	17.57	7.57	2870	0.00	310	29.7	300	
10:56	94.6	17.94	7.58	2870	0.00	309	27.0	300	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/15/2010

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-18A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 106.80

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs

Final Water Level (feet btoc): 106.80

QC Samples Collected: None

Purge Start Time: 16:00

Sample Number: 4932-12

Sample Time: 16:43

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: ~~175~~ 125 psi

Samplers= Signatures: KJ, WJM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:05	106.8	23.07	6.52	4660	5.37	310	800	200	
16:08	106.8	21.05	6.52	4730	4.37	334	>800	200	
16:11	106.8	20.33	6.60	4550	2.80	345	>800	200	
16:14	106.8	18.16	6.60	4650	2.33	352	396	200	
16:17	106.8	15.86	6.61	4510	1.44	364	245	200	Ruptured Bladder
16:34	106.8	20.25	7.07	4640	0.30	333	264	200	Started Pump Again
16:37	106.8	17.73	6.94	4630	0.66	342	160	200	
16:40	106.8	17.25	6.89	4560	0.79	346	150	200	
16:43	106.8	16.69	6.88	4570	0.77	345	163	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/15/2010

OVM: FID G PID G **In Casing (ppm):** (Initial) ________ (Vented to) atmosphere

Well ID: MW-18C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 108.84

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

Final Water Level (feet btoc): 108.86

QC Samples Collected: None

Purge Start Time: 18:08

Sample Number: 2nd 4932-2

Sample Time: 18:44

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 150 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
18:11	108.84	23.56	7.08	4680	4.97	251	8.1	200	
18:14	108.84	23.75	6.63	6800	3.29	217	3.8	200	
18:17	108.84	22.79	6.67	6930	3.00	232	2.0	200	
18:20	108.84	21.94	6.70	7120	3.31	259	1.1	200	
18:23	108.84	20.78	6.72	7200	3.26	272	0.6	200	
18:26	108.84	20.40	6.73	7220	3.12	288	0.2	200	
18:29	108.84	20.62	6.74	7220	3.68	300	0.2	200	
18:32	108.84	20.81	6.75	7220	3.54	310	0.0	200	
18:35	108.84	20.96	6.76	7230	3.39	317	0.1	200	
18:38	108.84	20.93	6.76	7240	3.06	322	0.3	200	
18:41	108.84	20.92	6.76	7260	3.04	327	0.3	200	
18:44	108.84	20.99	6.78	7250	2.92	331	0.3	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/15/2010

Well ID: MW - 18D

Initial Static Water Level (feet btoc): 109.05

Final Water Level (feet btoc): 109.04

Purge Start Time: 13:45

Sample Time: 14:24

Samplers= Signatures: KJ, WM

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: Nitrat/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

QC Samples Collected: None

Sample Number: 4932-1

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 175 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:48	109.05	18.43	6.82	4950	5.36	330	11.6	200	
13:51	109.05	18.22	6.81	4920	4.94	332	12.4	200	
13:54	109.05	18.13	6.88	4920	4.57	336	12.4	200	
13:57	109.05	17.54	6.91	4920	3.91	335	14.4	200	
14:00	109.05	18.00	6.97	4880	3.06	333	16.0	200	
14:03	109.05	18.25	7.03	4860	2.18	329	17.3	200	
14:06	109.05	18.48	7.10	4850	1.73	325	19.3	200	
14:09	109.05	18.61	7.08	4840	1.44	324	19.3	200	
14:12	109.05	18.83	7.09	4830	1.16	322	19.8	200	
14:15	109.05	18.89	7.14	4830	1.02	319	20.0	200	
14:18	109.05	18.82	7.17	4830	0.87	317	19.0	200	
14:21	109.05	18.85	7.21	4830	0.79	315	17.9	200	
14:24	109.05	18.45	7.18	4830	0.69	316	17.2	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/20/2010 OVM: FID G PID G In Casing (ppm): (Initial) ____ (Vented to) atmosphere

Well ID: MW-41D1 Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 119.88 Analytical Parameters: VOCs

Final Water Level (feet btoc): 119.88 QC Samples Collected: None

Purge Start Time: 11:50 Sample Number: 4932-27

Sample Time: 12:51 Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 100 psi

Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:09	119.88	21.41	6.15	6010	4.23	209	10.4	200	
12:12	119.88	18.30	6.62	6420	4.76	212	8.9	200	
12:15	119.88	17.02	6.74	6590	3.31	216	30.3	200	
12:18	119.88	16.79	6.86	6610	1.67	214	52.5	200	
12:21	119.88	16.79	6.94	6650	0.97	208	58.4	200	
12:24	119.88	16.81	6.94	6670	0.60	209	53.6	200	
12:27	119.88	16.88	7.00	6660	0.45	207	43.0	200	
12:30	119.88	16.83	7.02	6660	0.43	205	35.5	200	
12:33	119.88	16.83	7.03	6660	0.55	203	23.8	200	
12:36	119.88	16.60	7.01	6670	0.43	203	18.9	200	
12:39	119.88	16.55	7.00	6670	0.48	203	13.0	200	
12:42	119.88	16.68	7.01	6640	0.49	204	7.4	200	
12:45	119.88	16.57	6.98	6640	0.75	204	4.8	200	
12:48	119.88	16.56	6.97	6640	0.96	206	1.4	200	
12:51	119.88	16.57	6.96	6640	0.99	208	0.0		

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/20/2010

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-41D2

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 119.65

Analytical Parameters: VOCs

Final Water Level (feet btoc): 119.65

QC Samples Collected: None

Purge Start Time: 10:40

Sample Number: 4932-26

Sample Time: 11:20

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 115 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:53	119.65	18.69	6.45	3730	3.35	189	0.0	200	
10:56	119.65	18.01	6.70	3660	3.38	197	0.0	200	
10:59	119.65	17.36	6.83	3640	3.00	202	20.0	200	
11:02	119.65	17.02	6.84	3610	2.86	208	22.0	200	
11:05	119.65	16.87	6.86	3600	2.74	213	25.1	200	
11:08	119.65	16.99	6.87	3580	2.55	215	24.2	200	
11:11	119.65	17.11	6.90	3570	2.45	219	24.2	200	
11:14	119.65	17.07	6.90	3570	2.49	222	24.2	200	
11:17	119.65	17.17	6.89	3570	2.38	223	24.2	200	
11:20	119.65	17.33	6.88	3570	2.40	223	24.2	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/2010

Well ID: MW-42D

Initial Static Water Level (feet btoc): 121.13

Final Water Level (feet btoc): 121.14

Purge Start Time: 8:40

Sample Time: 9:25

Samplers= Signatures: KJ, WM

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

QC Samples Collected: 4932-9 FD

Sample Number: 4932-9

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 125 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:04	121.13	19.08	6.13	7260	5.34	240	26.6	250	
9:07	121.13	17.14	6.35	5910	4.60	230	38.8	250	
9:10	121.13	16.74	6.55	5460	3.94	230	36.5	250	
9:13	121.13	16.45	6.61	5280	3.97	231	23.1	250	
9:16	121.13	16.33	6.67	5230	3.87	230	9.2	250	
9:19	121.13	16.29	6.69	5260	3.88	233	0.0	250	
9:22	121.13	16.29	6.71	5280	4.00	239	0.0	250	
9:25	121.13	15.86	6.66	5280	3.94	243	0.0	250	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/17/2010

OVM: FID G PID G **In Casing (ppm): (Initial)** ________ **(Vented to)** atmosphere

Well ID: MW-42E

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 121.10

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

Final Water Level (feet btoc): ________

QC Samples Collected: None

Purge Start Time: 15:33

Sample Number: 4932-8

Sample Time: 18:06

Controller Settings: Recharge: 15 **secs Discharge:** 15 **secs Pressure:** 125 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:40	121.10	28.23	6.23	4290	4.28	293	30.0	NA	
15:43	121.10	28.60	6.64	4250	2.73	275	23.3	NA	
15:46									Pause to troubleshoot Pump Settings
16:45	121.06	26.76	6.83	4270	3.76	231	41.4	200	Resume Pumping
16:48	121.06	23.86	6.97	4360	2.47	243	80.8	200	
16:51	121.06	22.25	7.06	4250	1.58	243	120	200	
16:54	121.06	21.54	7.07	4230	0.74	245	124	200	
16:57	121.06	21.04	7.04	4250	0.75	244	122	200	
17:00	121.06	21.03	7.04	4250	0.64	245	101	200	
17:03	121.06	20.89	7.02	4260	0.73	248	86.5	200	
17:06	121.06	20.88	7.01	4230	0.89	250	79.9	200	
17:09	121.06	20.70	6.98	4250	1.01	251	75.7	200	
17:12	121.06	20.67	6.98	4220	0.96	254	72.0	200	
17:15	121.06	20.68	6.91	4260	0.94	258	63.9	200	
17:18	121.06	20.74	6.90	4240	1.00	259	67.2	200	
17:21	121.06	20.69	6.92	4250	1.13	259	64.8	200	
17:24	121.06	20.68	6.95	4240	1.08	260	60.0	200	
17:27	121.06	20.12	6.95	4240	1.18	262	49.3	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

Continued on Back

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/20/2010

OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-43D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 125.90

Analytical Parameters: VOCs

Final Water Level (feet btoc): 125.91

QC Samples Collected: None

Purge Start Time: 9:15

Sample Number: 4932-25

Sample Time: 9:35

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 100 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:23	125.90	16.86	6.79	4560	3.27	215	0.0	200	
9:26	125.90	16.73	6.80	4630	3.38	218	0.0	200	
9:29	125.90	16.59	6.78	5060	3.70	219	0.0	200	
9:32	125.90	16.51	6.80	5080	3.62	222	2.2	200	
9:35	125.90	16.49	6.78	5120	3.57	223	3.9	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/20/2010

OVM: **FID** G **PID** G **In Casing (ppm):** **(Initial)** ________ **(Vented to)** atmosphere

Well ID: MW-43E

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 125.87

Analytical Parameters: VOCs

Final Water Level (feet btoc): 125.87

QC Samples Collected: None

Purge Start Time: 8:15

Sample Number: 4932-24

Sample Time: 8:46

Controller Settings: Recharge: 15 **secs** **Discharge:** 15 **secs** **Pressure:** 125 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:25	125.87	19.19	5.82	6490	3.71	214	0.0	200	
8:28	125.87	17.50	5.86	5520	4.11	214	3.0	200	
8:31	125.87	16.57	6.24	4730	3.50	205	3.8	200	
8:34	125.87	16.16	6.45	4380	2.77	201	4.7	200	
8:37	125.87	16.09	6.55	4150	2.20	200	2.9	200	
8:40	125.87	15.98	6.65	4100	1.55	198	1.4	200	
8:43	125.87	15.66	6.71	4070	1.53	199	0.0	200	
8:46	125.87	15.57	6.73	4050	1.70	201	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/2010

Well ID: MW-44D

Initial Static Water Level (feet btoc): 109.83

Final Water Level (feet btoc): 109.75

Purge Start Time: 11:50

Sample Time: 12:48

Samplers= Signatures: KJ, WM

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethene, VOCs

QC Samples Collected: None

Sample Number: 4932-14

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 115 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:57	109.75	20.58	6.84	4080	4.22	216	7.4	200	
12:00	109.75	19.03	6.98	3920	3.66	224	53.1	200	
12:03	109.75	18.20	7.02	3810	3.38	230	46.2	200	
12:06	109.75	17.65	7.00	3750	3.25	237	39.6	200	
12:09	109.75	17.54	6.99	3740	2.99	241	30.5	200	
12:12	109.75	17.45	7.02	3720	2.75	247	29.2	200	
12:15	109.75	17.48	7.01	3700	2.80	251	28.5	200	
12:18	109.75	17.48	7.02	3710	2.85	253	24.1	200	
12:21	109.75	17.24	6.99	3700	2.85	254	19.4	200	
12:24	109.75	17.23	6.99	3690	2.84	256	14.1	200	
12:27	109.75	17.35	7.00	3690	2.71	258	11.2	200	
12:30	109.75	17.58	6.99	3680	2.81	260	9.7	200	
12:33	109.75	17.77	6.98	3690	2.75	262	7.4	200	
12:36	109.75	17.99	7.00	3700	2.65	262	6.0	200	
12:39	109.75	18.21	6.98	3700	2.79	262	6.0	200	
12:42	109.75	18.33	6.98	3690	2.70	262	4.7	200	
12:45	109.75	18.53	6.96	3700	2.83	263	2.2	200	
12:48	109.75	18.71	6.99	3700	2.71	264	2.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/2010

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-44E

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 109.83

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs

Final Water Level (feet btoc): 109.83

QC Samples Collected: None

Purge Start Time: 14:03

Sample Number: 4932-15

Sample Time: 14:38

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 125 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
14:10	109.83	23.89	7.12	3620	3.33	254	0.0	200	
14:13	109.83	21.62	7.18	3550	3.33	256	0.0	200	
14:16	109.83	19.26	7.23	3410	2.59	260	0.0	200	
14:19	109.83	17.96	7.26	3360	2.69	261	0.0	200	
14:22	109.83	18.08	7.25	3280	2.00	264	0.0	200	
14:25	109.83	17.82	7.24	3280	1.32	264	0.0	200	
14:28	109.83	17.43	7.25	3260	1.04	264	0.0	200	
14:32	109.83	17.08	7.25	3240	0.93	267	0.0	200	
14:35	109.83	17.01	7.24	3230	0.92	268	0.0	200	
14:38	109.83	17.08	7.22	3230	0.99	269	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/16/2010 OVM: FID ◻ PID ◻ In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Well ID: MW-45C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 102.61

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

Final Water Level (feet btoc): 102.61

QC Samples Collected: 4932-5 FD (VOCs)

Purge Start Time: 17:30

Sample Number: 4932-5

Sample Time: 17:47

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 150 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
17:35	102.61	23.62	7.17	5950	4.61	361	28.0	300	
17:38	102.61	19.60	7.11	6390	5.99	370	80.7	300	
17:41	102.61	18.15	7.08	6540	6.69	376	83.8	300	
17:44	102.61	17.55	7.07	6600	6.56	379	84.6	300	
17:47	102.61	17.66	7.18	6390	6.43	369	83.6	300	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/16/2010

OVM: FID G PID G **In Casing (ppm):** (Initial) ________ (Vented to) atmosphere

Well ID: MW-45D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 102.29

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

Final Water Level (feet btoc): 102.28

QC Samples Collected: 4932-3 FD (No VOCs)

Purge Start Time: 15:10

Sample Number: 4932-3

Sample Time: 16:11

Controller Settings: Recharge: 20 **secs Discharge:** 10 **secs Pressure:** 175 **psi**

Samplers= Signatures: KJ, WJM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:13	102.29	29.96	7.74	0.000	5.91	230	42.1	250	
15:16	102.29	24.62	7.29	5300	5.82	286	348	250	
15:19	102.29	23.84	7.20	5290	5.20	301	277	250	
15:22	102.29	22.54	7.14	5280	4.49	319	188	250	
15:25	102.29	22.28	7.13	5250	3.83	329	530	250	
15:28	102.29	21.22	7.12	5260	3.33	337	370	250	
15:31	102.29	20.61	7.09	5200	3.14	344	115	250	
15:34	102.29	20.41	7.10	5330	3.21	349	46.3	250	
15:37	102.29	19.92	7.15	5390	3.14	NA	NA	250	Horiba Battery Exhaustion
15:50	102.29	19.10	7.16	5440	6.30	346	21.0	250	Resume Readings
15:53	102.29	19.40	7.16	5430	3.85	350	19.3	250	
15:56	102.29	19.75	7.14	5430	3.50	351	15.7	250	
15:59	102.29	19.87	7.14	5420	3.40	353	15.5	250	
16:02	102.29	19.96	7.15	5440	3.27	353	13.9	250	
16:05	102.29	19.85	7.15	5470	3.26	354	9.8	250	
16:08	102.29	19.60	7.14	5480	3.41	355	9.6	250	
16:11	102.29	19.41	7.13	5510	3.30	357	9.2	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/17/2010

OVM: FID G PID G **In Casing (ppm):** **(Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-46 DI

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 114.43

Analytical Parameters: ~~Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane~~, VOCs

Final Water Level (feet btoc): 114.51

QC Samples Collected: None

Purge Start Time: 8:03

Sample Number: 4932-6

Sample Time: 9:55

Controller Settings: Recharge: 23 **secs Discharge:** 7 **secs Pressure:** 200 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:10	114.43	21.58	6.00	9500	4.63	234	>800	250	
8:13	114.43	20.55	6.41	1090	2.73	226	>800	250	
8:16	114.43	20.45	6.56	1130	2.10	221	>800	250	
8:19	114.43	20.34	6.65	1170	1.64	220	>800	250	
8:22	114.43	20.10	6.70	1150	1.23	219	>800	250	
8:25	114.43	20.13	6.76	1170	0.81	217	>800	250	
8:28	114.43	19.96	6.84	1220	0.57	214	>800	250	
8:31	114.43	20.04	6.93	1270	0.37	213	>800	250	
8:34	114.43	20.23	6.98	1320	0.23	211	>800	250	
8:37	114.43	20.46	7.04	1340	0.15	211	>800	250	
8:40	114.43	20.80	7.07	1360	0.13	210	>800	250	
8:43	114.43	21.05	7.07	1370	0.16	216	>800	250	
8:46	114.43	21.25	7.06	1370	0.18	210	>800	250	
8:49	114.43	21.55	7.04	1360	0.21	212	>800	250	
8:52	114.43	21.75	7.05	1340	0.24	214	>800	250	Stopped taking readings Adjust pressure wait for turb to decrease
~~8:55~~									
9:10	114.43	21.91	7.10	1080	0.58	228	>800	250	Started readings again, no change in turb
9:13	114.43	21.81	7.03	1050	0.13	227	>800	250	
9:16	114.43	21.78	7.01	1030	0.16	228	>800	250	Stopped taking readings

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

continued on back

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/17/2010

OVM: FID G PID G **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-46 D2

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 114.66

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, TOC, Methane/Ethane, VOCs

Final Water Level (feet btoc): 114.63

QC Samples Collected: Extra Vol for MS/MSD

Purge Start Time: 10:37

Sample Number: 4932-7

Sample Time: 12:08

Controller Settings: Recharge: 47 **secs Discharge:** 13 **secs Pressure:** 225 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 1

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:51	114.66	25.40	6.78	5230	3.88	271	260	150	
10:54	114.66	25.31	6.91	5050	3.31	275	276	150	
10:57	114.66	23.63	6.97	5120	3.14	278	147	150	
11:00	114.66	21.64	6.97	4990	3.27	283	79.3	150	
11:03	114.66	20.82	6.97	4880	2.90	286	86.9	150	
11:06	114.66	21.31	6.95	4780	2.47	288	85.3	150	
11:09	102.83	21.47	6.96	4750	2.18	292	52.4	150	
11:12	102.83	21.87	6.95	4740	2.05	297	37.6	150	
11:15	102.83	22.18	6.95	4746	1.96	299	39.7	150	
11:18	102.83	22.47	6.95	4740	1.72	301	40.8	150	
11:21	102.83	22.99	7.00	4730	1.59	302	34.1	150	
11:24	102.83	23.42	6.99	4730	1.52	302	30.7	150	
11:27	102.83	23.92	7.00	4730	1.47	300	28.4	150	
11:30	102.83	24.55	6.99	2080	1.36	297	20.8	150	Ran out of Nitrogen
11:47	102.83	26.76	7.00	4810	1.40	270	29.0	150	Resume Pumping

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

Continued on Back

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/21/2010

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-104A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 105.26

Analytical Parameters: VOCs

Final Water Level (feet btoc): 105.26

QC Samples Collected: None

Purge Start Time: 10:00

Sample Number: 4932-36

Sample Time: 10:33

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 60 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:08	105.26	20.79	6.52	7950	2.67	227	0.0	200	
10:11									Battery Exhaustion
10:16	105.26	20.03	6.72	9170	4.04	229	0.0	200	
10:19	105.26	20.15	6.75	9580	3.98	231	0.0	200	
10:24	105.26	20.13	6.78	9650	3.44	231	0.0	200	Resume Regular Readings
10:27	105.26	20.10	6.77	9770	3.28	232	0.0	200	
10:30	105.26	20.06	6.77	9880	3.19	233	0.0	200	
10:33	105.26	20.14	6.78	9980	3.10	233	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/21/2010

OVM: FID G PID G **In Casing (ppm): (Initial)** ______ **(Vented to)** atmosphere

Well ID: MW-104C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 106.85

Analytical Parameters: VOCs

Final Water Level (feet btoc): 106.85

QC Samples Collected: None

Purge Start Time: 8:20

Sample Number: 4932-34

Sample Time: 8:53

Controller Settings: Recharge: 15 **secs Discharge:** 15 **secs Pressure:** 100 **psi**

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:32	106.85	19.06	5.78	6870	3.82	217	0.0	250	
8:35	106.85	17.29	5.88	5260	3.97	221	0.0	250	
8:38	106.85	16.20	6.22	4620	3.57	212	0.0	250	
8:41	106.85	16.20	6.41	4460	3.34	212	0.0	250	
8:44	106.85	15.93	6.48	4420	3.23	212	0.0	250	
8:47	106.85	15.91	6.60	4380	3.09	212	0.0	250	
8:50	106.85	16.10	6.66	4360	3.10	217	0.0	250	
8:53	106.85	16.05	6.68	4350	2.98	219	0.0	250	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/21/2010

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-104D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 106.72

Analytical Parameters: VOCs

Final Water Level (feet btoc): 106.72

QC Samples Collected: None

Purge Start Time: 9:20

Sample Number: 4932-35

Sample Time: 9:37

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 115 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:25	106.72	18.72	6.19	3720	3.09	217	0.0	250	
9:28	106.72	17.23	6.57	3500	2.40	209	0.0	250	
9:31	106.72	17.53	6.73	3350	2.08	211	0.0	250	
9:34	106.72	17.50	6.79	3300	1.91	214	0.0	250	
9:37	106.72	17.50	6.83	3290	1.90	215	0.0	250	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/18/2010

OVM: FID G PID G In Casing (ppm): (Initial) ________ (Vented to) atmosphere

Well ID: MW-105A

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 119.76

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs

Final Water Level (feet btoc): 119.76

QC Samples Collected: None

Purge Start Time: 16:30

Sample Number: 4932-16

Sample Time: 17:48

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 110 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:33	119.76	23.75	6.20	7940	5.30	254	402	200	
16:36	119.76	20.54	6.83	8210	3.22	238	295	200	
16:39	119.76	19.62	7.19	8400	1.16	226	255	200	
16:42	119.76	19.35	7.47	8280	0.62	216	220	200	
16:45	119.76	19.01	7.71	8270	0.00	206	200	200	
16:48	119.76	18.63	7.83	8230	0.00	201	183	200	
16:51	119.76	19.16	7.89	8200	0.00	199	162	200	
16:54	119.76	19.08	7.92	8210	0.00	197	141	200	
16:57	119.76	18.51	7.97	8140	0.00	196	124	200	
17:00	119.76	18.25	7.99	8150	0.00	195	100	200	
17:03	119.76	18.61	7.97	8160	0.00	193	96.5	200	
17:06	119.76	18.77	7.99	8100	0.00	194	84.6	200	
17:09	119.76	18.61	8.02	8190	0.00	194	76.3	200	
17:12	119.76	18.67	8.01	8140	0.00	195	65.4	200	
17:15	119.76	18.29	8.02	8110	0.00	195	53.9	200	
17:18	119.76	18.20	8.03	8120	0.00	195	45.1	200	
17:21	119.76	18.06	8.05	8120	0.00	195	41.0	200	
17:24	119.76	18.14	8.04	8110	0.00	196	36.4	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

Continued on Back

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/19/2010

OVM: FID G PID G **In Casing (ppm):** (Initial) ______ **(Vented to)** atmosphere

Well ID: MW-105C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 121.10

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs

Final Water Level (feet btoc): 118.17

QC Samples Collected: None

Purge Start Time: 9:20

Sample Number: 4932-17

Sample Time: 10:08

Controller Settings: Recharge: 15 **secs Discharge:** 15 **secs Pressure:** ~~115~~ 100 **psi** 105

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:28	121.10	17.65	6.04	8680	4.73	226	0.0	200	
9:31	121.10	16.04	6.25	7750	5.09	211	0.0	200	
9:34	118.17	15.51	6.51	7220	4.92	203	0.0	200	
9:37	118.17	14.97	6.54	NA	NA	NA	NA	200	Equipment Malfunction
9:56	118.17	16.51	7.06	6620	1.83	166	0.0	200	Resume Pumping
9:59	118.17	16.10	7.14	6690	1.35	168	0.0	200	
10:02	118.17	16.02	7.16	6700	0.99	171	0.0	200	
10:05	118.17	16.01	7.16	6700	0.98	173	0.0	200	
10:08	118.17	16.09	7.16	6690	0.85	173	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 10/19/2010

Well ID: MW-105D

Initial Static Water Level (feet btoc): 121.87

Final Water Level (feet btoc): 120.91

Purge Start Time: 12:00

Sample Time: 12:28

Samplers= Signatures: KJ, WM

OVM: FID G PID G In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: Nitrate/Nitrite, Alkalinity, Anions, Methane/Ethane, VOCs

QC Samples Collected: None

Sample Number: 4932-11

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 110 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:10	121.87	23.87	7.02	4780	3.78	146	0.0	200	
12:13	121.87	21.09	7.09	4390	3.44	153	0.0	200	
12:16	121.87	19.60	7.14	4120	2.35	159	0.0	200	
12:19	121.87	20.87	7.15	3990	1.73	167	0.0	200	
12:22	121.87	22.51	7.05	4010	2.61	172	0.0	200	
12:25	121.87	22.66	7.08	4060	2.72	175	0.0	200	
12:28	121.87	22.52	7.11	4050	2.74	178	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 6/21/2010

Well ID: MW-106A

Initial Static Water Level (feet btoc): 120.23

Final Water Level (feet btoc): ______

Purge Start Time: ~~14:23~~ 15:55

Sample Time: 16:15

Samplers= Signatures: AF KJ

OVM: FID ❑ PID ❑ In Casing (ppm): (Initial) ______ (Vented to) atmosphere

Purging/Sampling Device: BLADDER PUMP

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 4932-38

Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 80 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:03	120.25	19.42	7.03	7460	3.35	104	0.0	150	
16:06	120.25	19.17	7.00	7690	3.95	105	0.0	150	
16:09	120.25	17.37	7.04	7840	4.32	113	0.0	150	
16:12	120.25	16.92	7.02	7880	4.53	114	0.0	150	
16:15	120.25	16.97	6.98	7850	4.51	115	0.0	150	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

HGL CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/21/2010

OVM: FID G PID G **In Casing (ppm):** (Initial) ________ (Vented to) atmosphere

Well ID: MW-106C

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 122.88

Analytical Parameters: VOCs

Final Water Level (feet btoc): ________

QC Samples Collected: None

Purge Start Time: 16:35

Sample Number: 4932-

Sample Time: 16:52

Controller Settings: Recharge: 15 **secs Discharge:** 15 **secs Pressure:** 100 **psi**

Samplers= Signatures: AF KJT

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:40	122.88	21.80	6.95	7100	4.48	112	0.0	200	
16:43	122.88	19.05	6.81	5680	5.78	114	0.0	200	
16:46	122.88	18.27	6.77	5560	5.78	117	0.0	200	
16:49	122.88	17.76	6.77	5530	5.50	119	0.0	200	
16:52	122.88	17.54	6.76	5520	5.54	120	0.0	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site **Date:** 6/21/2010

OVM: FID G PID G **In Casing (ppm): (Initial)** ________ **(Vented to)** atmosphere

Well ID: MW-106D

Purging/Sampling Device: BLADDER PUMP

Initial Static Water Level (feet btoc): 122.91

Analytical Parameters: VOCs

Final Water Level (feet btoc): 122.91

QC Samples Collected: None

Purge Start Time: 14:55

Sample Number: 4932-33

Sample Time: 15:38

Controller Settings: Recharge: 15 **secs Discharge:** 15 **secs Pressure:** 102 **psi**

Samplers= Signatures: KJ AF

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:05	122.91	29.41	6.93	3780	4.33	107	0.0	100	
15:08	122.91	29.51	6.98	3800	3.71	108	0.0	100	
15:11	122.91	29.37	7.20	3890	4.21	96	0.0	100	
15:14	122.91	27.00	7.19	3880	4.36	99	0.0	100	
15:17	122.91	22.54	7.23	3860	4.63	104	0.0	100	
15:20	122.91	20.88	7.20	3810	3.60	103	0.0	100	
15:23	122.91	19.48	7.29	3740	2.47	107	0.0	100	
15:26	122.91	19.30	7.26	3720	1.93	104	0.0	100	
15:29	122.91	19.62	7.23	3700	1.78	101	0.0	100	
15:32	122.91	19.28	7.28	3700	1.48	102	0.0	100	
15:35	122.91	19.08	7.23	3670	1.44	100	0.0	100	
15:38	122.91	19.76	7.24	3680	1.51	100	0.0	100	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

HGL CDM

APPENDIX L

SURVEY DATA

Appendix L
Survey Data
Garvey Elevator Site
Hastings, Nebraska

Location	Northing	Easting	Elevation
HTW 40- TOP PVC	271217.76	2079157.791	1941.646
HTW 40-PAD	271217.856	2079157.749	1939.492
IRRIGATION WELL E. SIDE	268948.213	2079469.536	1923.945
IRRIGATION WELL S. SIDE	268893.975	2080785.037	1933.216
IRRIGATION WELL TOP CONC S. SIDE	272985.052	2080619.317	1929.148
IRRIGATION WELL W. SIDE	270331.739	2081137.966	1929.046
IW-1 CONC W. SIDE	270863.284	2080136.846	1926.384
IW-1 TOP FLANGE	270863.284	2080138.346	1921.184
IW-2 CONC W. SIDE	270331.729	2080129.836	1925.274
IW-2 TOP FLANGE	270331.729	2080131.336	1919.984
MW06-A CONC. W. SIDE	271237.522	2081216.949	1929.48
MW06-A MARK W. SIDE CASING	271237.345	2081216.968	1931.993
MW06-D CONC. W. SIDE	271244.286	2081221.035	1929.455
MW06-D MARK W. SIDE CASING	271244.17	2081221.205	1931.141
MW06-E CONC. S. SIDE	271244.474	2081208.683	1929.645
MW06-E MARK W. SIDE CASING	271244.606	2081208.806	1932.131
MW10-A CONC. S. SIDE	272535.126	2081973.519	1923.809
MW10-A MARK. S. SIDE	272535.399	2081973.782	1923.479
MW10-B CONC. S. SIDE	272530.374	2081982.325	1923.701
MW10-B MARK. S. SIDE	272530.51	2081982.385	1923.353
MW11-A CONC. N. SIDE	271826.733	2083509.15	1912.28
MW11-A MARK N. SIDE	271826.499	2083509.07	1911.838
MW12-A CONC. N. SIDE	270400.162	2085390.331	1917.131
MW12-A MARK N. SIDE	270399.71	2085390.335	1919.65
MW12-C CONC N. SIDE	270400.535	2085379.424	1916.677
MW12-C MARK N. SIDE	270400.369	2085379.468	1919.64
MW-12D PAD	270399.901	2085403.521	1916.983
MW-12D TOP PVC	270399.729	2085403.614	1918.89
MW13-C CONC. S.SIDE	270368.734	2081015.662	1928.742
MW13-C CONC. W.SIDE	270393.418	2081014.058	1928.89
MW13-C MARK S.SIDE	270368.902	2081015.694	1929.647
MW13-C MARK W.SIDE	270393.318	2081014.304	1930.428
MW13-E MARK W.SIDE	270393.318	2081014.304	1930.428
MW14-A CONC. N. SIDE	270969.139	2084136.925	1909.556
MW14-A MARK. N. SIDE	270968.774	2084137.323	1911.691
MW-16A TOP CASING EAST SIDE	267054.564	2084286.931	1915.447
MW-16A TOP PVC EAST SIDE	267054.53	2084286.745	1914.944
MW-16C TOP CASING SOUTH SIDE	267048.421	2084285.97	1915.467
MW-16C TOP PVC SOUTH SIDE	267048.593	2084285.984	1915.075
MW17-A . MARK N. SIDE	268796.556	2082958.916	1903.703
MW17-A CONC. N. SIDE	268796.863	2082958.998	1901.854
MW17-C CONC. N. SIDE	268796.531	2082969.353	1901.674
MW17-C MARK. S. SIDE	268795.876	2082969.298	1902.905
MW17-D CONC. N. SIDE	268796.81	2082964.318	1901.729
MW17-D MARK. S. SIDE	268796.267	2082964.251	1902.933
MW18-A CONC. N. SIDE	268694.09	2085938.35	1910.637
MW18-A MARK. N. SIDE	268693.818	2085938.384	1912.889
MW18-C CONC. N. SIDE	268683.697	2085938.354	1910.53
MW18-C MARK. N. SIDE	268683.36	2085938.592	1913.086
MW18-D CONC. S. SIDE	268704.357	2085938.789	1910.605
MW18-D MARK. S. SIDE	268704.658	2085938.735	1913.318
MW19-A/C E. SIDE CONC.	270955	2081333.115	1927.812
MW19-A/C TOP CAP	270955.133	2081332.85	1929.894
MW1-A CONC. N. SIDE	270591.307	2080164.44	1925.797
MW1-A MARK N. SIDE	270590.926	2080164.407	1927.081
MW20-A/C/D/E E. SIDE CONC.	270597.443	2081202.477	1927.97
MW20-A/C/D/E TOP CAP	270597.445	2081202.233	1929.929

Appendix L
Survey Data
Garvey Elevator Site
Hastings, Nebraska

Location	Northing	Easting	Elevation
MW2-A CONC. W. SIDE	271240.469	2080539.389	1927.33
MW2-A MARK W. SIDE CASING	271240.41	2080539.87	1930.219
MW30-A/C/D/E CONC. E. SIDE	270271.723	2081095.991	1929.032
MW30-A/C/D/E TOP CAP	270271.723	2081095.43	1930.983
MW31-A/C E. SIDE CONC	269550.51	2080816.429	1930.084
MW31-A/C TOP CAP	269550.764	2080816.035	1932.347
MW33 CONC. N. SIDE	271206.54	2079068.016	1940.74
MW33 MARK. N. SIDE	271206.314	2079068.057	1942.172
MW3-A CONC N. SIDE	270755.215	2080774.174	1930.991
MW3-A MARK. N. SIDE	270755.17	2080773.994	1934.269
MW3-B CONC. S. SIDE	270761.279	2080777.783	1931.072
MW3-B MARK. S. SIDE	270761.378	2080778.055	1932.754
MW3-D CONC S. SIDE	270762.69	2080754.122	1931.463
MW3-D MARK S. SIDE	270763.009	2080754.275	1933.37
MW3-E CONC N. SIDE	270744.026	2080767.887	1930.989
MW3-E MARK N. SIDE	270744.057	2080767.604	1932.254
MW-41-D1 PAD	266698.811	2089673.996	1915.236
MW-41-D1 TOP PVC	266698.668	2089673.997	1917.192
MW-41-D2 PAD	266708.267	2089674.259	1914.988
MW-41-D2 TOP PVC	266707.978	2089674.385	1916.957
MW-42D PAD	269168.074	2100135.574	1902.066
MW-42D TOP PVC	269167.917	2100135.441	1904.033
MW-42E PAD	269162.883	2100143.11	1902.229
MW-42E TOP PVC	269162.709	2100143.018	1904.125
MW-43D PAD	265395.404	2097605.59	1908.354
MW-43D TOP PVC	265395.165	2097605.559	1910.297
MW-43E PAD	265404.426	2097604.636	1908.454
MW-43E TOP PVC	265404.224	2097604.607	1910.344
MW44-D PAD	267552.324	2105258.206	1885.304
MW44-D TOP PVC	267552.024	2105258.206	1885.054
MW44-E PAD	267541.026	2105259.021	1885.298
MW44-E TOP PVC	267540.726	2105259.021	1885.048
MW-45C PAD	270056.199	2083476.668	1909.823
MW-45C TOP PVC	270056.013	2083476.694	1911.748
MW-45D PAD	270046.911	2083475.824	1909.464
MW-45D TOP PVC	270046.773	2083475.763	1911.384
MW46-D1 PAD	269055.295	2089632.928	1910.966
MW46-D1 TOP PVC	269055.175	2089632.928	1912.846
MW46-D2 PAD	269063.843	2089632.455	1911.025
MW46-D2 TOP PVC	269063.723	2089632.455	1913.025
MW4-A CONC N. SIDE	270342.263	2080827.087	1931.843
MW4-A MARK N. SIDE	270341.995	2080827.075	1931.601
MW4-B CONC W. SIDE	270342.658	2080832.558	1931.699
MW4-B MARK W. SIDE	270342.585	2080832.776	1931.375
MW5-A CONC S. SIDE	269943.59	2080752.723	1930.062
MW5-A MARK S. SIDE	269943.836	2080752.777	1930.259
MW5-B CONC N. SIDE	269946.969	2080745.913	1930.118
MW5-B MARK N. SIDE	269947.071	2080745.584	1931.722
MW5-D CONC S. SIDE	269930.284	2080740.425	1929.848
MW5-D MARK S. SIDE	269930.791	2080740.508	1931.873
MW7-A CONC W. SIDE	269088.475	2079699.468	1920.922
MW7-A MARK W. SIDE	269088.475	2079699.7	1923.22
MW7-B CONC N. SIDE	269089.002	2079692.515	1920.887
MW7-B MARK N. SIDE	269088.781	2079692.537	1923.838
MW8-A CONC. N. SIDE	271214.419	2079067.607	1940.802
MW8-A MARK. N. SIDE	271214.203	2079067.544	1943.221
MW9-A CONC. S. SIDE	272193.217	2080628.198	1925.397

Appendix L
Survey Data
Garvey Elevator Site
Hastings, Nebraska

Location	Northing	Easting	Elevation
MW9-A MARK. S. SIDE	272193.736	2080628.145	1928.031
RW-1 BRASS PLATE E. SIDE	270923.755	2080884.15	1931.602
RW-1 TOP FLANGE	270924.258	2080881.294	1928.362
RW-2 BRASS PLATE W. SIDE	270637.378	2080877.116	1929.457
RW-2 TOP FLANGE	270636.079	2080877.866	1926.417
RW-3 BRASS PLATE S. SIDE	270325.007	2080992.501	1929.138
RW-3 TOP FLANGE	270327.507	2080992.501	1926.138
RW-4 BRASS PLATE E. SIDE	270056.709	2080897.538	1929.051
RW-4 TOP FLANGE	270056.71	2080895.538	1926.101
RW-5 TOP CASING	270441.785	2080592.154	1928.232
RW-5 TOP W. SIDE	270441.785	2080591.154	1931.432
RW-6 BRASS PLATE E. SIDE OLD	270744.436	2081004.215	1929.753
RW-6 REP. WELL BRACKET E. SIDE CASING	270754.887	2081007.6	1931.616
RW-6 REPLACEMENT WELL GROUND	270754.779	2081007.567	1930.084
RW-6 TOP FLANGE OLD	270745.618	2081004.007	1926.823
RW-7 CONC. N. SIDE	270462.219	2080961.017	1930.385
RW-7 TOP FLANGE	270460.719	2080961.017	1927.385
RW-8 BRASS PLATE E. SIDE	270193.287	2080948.172	1931.844
RW-8 TOP FLANGE	270193.287	2080946.173	1928.934
RW-UNLABLED BRASS. PLATE W. SIDE	270553.785	2080612.882	1931.708
RW-UNLABLED TOP FLANGE	270553.785	2080615.882	1928.868
SB-01	270450.269	2080578.493	1930.992
SB-02	270426.596	2080591.7	1931.439
SB-03	270384.977	2080559.81	1930.293
SB-04	270403.219	2080689.762	1932.251
SB-05	270425.888	2080695.772	1931.697
SB-06	270284.994	2080814.288	1932.608
SB-07	270261.313	2080484.887	1928.411
SB-08	270220.76	2080672.668	1931.702
SB-09	270168.16	2080517.34	1929.844
SB-10	270121.975	2080630.837	1929.907
SB-11	269985.284	2080428.705	1930.017
SB-12	269813.978	2080365.378	1929.884
SB-13	269654.838	2080309.785	1929.73
SB-14	270032.039	2080804.614	1930.219
SB-15	270164.494	2080854.876	1930.503
SB-16	270070.467	2080765.563	1931.043
SB-17	269759.697	2080586.482	1927.394
SB-18	270165.719	2080790.547	1931.687
SB-19	270169.405	2080747.906	1932.079
SB-20	270264.952	2080344.475	1926.733
SB-21	270269.909	2080333.815	1927.257
SB-22	270468.17	2080609.342	1931.539
SB-23	270521.653	2080613.362	1931.453
SB-24	270583.69	2080670.214	1928.735
SB-25	270226.325	2080942.014	1931.858
SB-26	270347.371	2080961.955	1930.367
SB-27	270524.365	2081022.541	1929.531
SB-28	270706.583	2081089.467	1929.254
SB-29	270864.398	2081035.503	1929.891
SB-30	269821.281	2080706.377	1928.79
SB-31	270772.148	2080734.724	1931.592
SB-32	271237.915	2079979.855	1924.746
SB-33	269199.799	2080682.378	1934.464
SB-34	269515.167	2080619.961	1930.229
SB-35	269706.513	2080691.064	1929.947
SB-36	269696.011	2080482.598	1926.931

Appendix L
Survey Data
Garvey Elevator Site
Hastings, Nebraska

Location	Northing	Easting	Elevation
SB-37	271076.414	2081192.375	1929.307
SB-38	271160.138	2081411.594	1927.692
SB-39	271537.352	2081550.026	1925.832
SB-40	271300.755	2080998.966	1928.562
SD-01	269485.834	2079758.346	1918.7
SD-02	269014.651	2079770.179	1918.52
SD-03	269992.695	2080243.958	1925.651
SD-04	270600.268	2080417.565	1926.337
SD-05	271209.148	2079970.673	1921.421
SD-06	269555.266	2080354.325	1925.517
SD-08	269151.414	2080579.62	1930.374
SD-09	269867.374	2080858.074	1927.767
SD-10	270306.09	2081014.993	1926.071
SD-11	270821.822	2081210.787	1925.839
SVE-01 TOP FLANGE	270553.785	2080615.882	1928.868
SVE-05 TOP PIPE	270417.31	2080729.751	1931.771
SVE-05 TOP W. SIDE	270417.31	2080729.351	1932.111
SVE-06 TOP PIPE	270380.987	2080804.755	1931.582
SVE-06 TOP W. SIDE	270380.987	2080804.355	1931.702
SVE-10 TOP RIM W. SIDE	270411.814	2080657.696	1931.729
SVE-11 TOP RIM N. SIDE	270373.081	2080850.415	1930.862
SVE-2 TOP N. SIDE	270490.798	2080714.177	1931.347
SVE-2 TOP PIPE	270490.398	2080714.177	1931.177
SVE-3 BRASS PLATE W. SIDE	270484.194	2080523.578	1930.725
SVE-3 TOP FLANGE	270484.194	2080525.078	1927.875
SVE-4 TOP RIM W. SIDE	270453.965	2080616.161	1931.456
SVE-7 TOP RIM W. SIDE	270412.172	2080564.029	1931.383
SVE-8 TOP RIM W. SIDE	270382.286	2080648.617	1932.232
SVE-9 BRASS PLATE W. SIDE	270617.947	2080716.086	1929.496
SVE-9 TOP FLANGE	270617.947	2080719.086	1926.266
TS1-01	269515.615	2089614.339	1915.69
TS1-02	268951.773	2089637.655	1911.163
TS1-03	268313.868	2089646.765	1912.514
TS1-04	267650.422	2089650.973	1914.73
TS1-05	267030.127	2089665.004	1916.236
TS1-06	266342.537	2089664.885	1911.314
TS2-01	272792.725	2097482.691	1910.981
TS2-02	271456.113	2097510.251	1910.145
TS2-03	270184.717	2097531.213	1904.645
TS2-04	268939.527	2097554.155	1903.601
TS2-05	267717.573	2097569.698	1901.431
TS2-06	266250.085	2097592.053	1905.005
TS2-07	264932.127	2097617.242	1909.4
TS3-01	270671.231	2102759.673	1893.392
TS3-02	269400.264	2102787.273	1894.151
TS3-03	268057.907	2102800.016	1893.303
TS3-04	266777.308	2102812.115	1890.562
TS3-05*	265786.308	2102812.115	NA
TS4-01	268226.774	2105246.092	1885.649
TS4-02	267112.179	2105261.928	1884.475
TS4-03	267313.869	2105260.541	1885.388

Notes:
*TS3-05 was hand measured in the field using the TS3-04 coordinates

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Architecture
Surveying
Planning

To HGL:

I certify to the best of my knowledge that the information provided to you for work completed on 6-03-2010 was made by me or under my direct supervision and is true and accurate horizontally within .10 foot and vertically within .01 foot as indicated by our equipment. At set up, CP-2 was occupied and checked into BM NGS LH1383, the horizontal tolerance was less than .10 foot and the vertical tolerance was less than .01 foot. CP-2 is a 5/8" rebar that was established by occupying NGS Harn point # LH1383 and locating cp-2, then checking in to BM NGS LH-1476. At check-in the horizontal tolerance was within .10 foot and our vertical tolerance was within .01 foot. I have attached the NGS data sheets that were used for horizontal and vertical control for your knowledge.

Bench Mark Data.
P.I.D. LH1383
LOCATION Hastings Airport.
NAD 83 Coordinates
Latitude 40°36'10.39"N (284297.33)
Longitude 98°25'36.87"W (2077118.81)
NAVD 88 Elevation. 1943.79

P.I.D. LH1476
Location Hastings NE
NAD 83 Coordinates provided by our observation.
Latitude 40°35'46.08"N (281916.72)
Longitude 98°24'41.07"W (2081466.68)
NAVD 88 Elevation. 1927.72

CP-2 5/8" Rebar
Location Hastings NE
NAD 83 Coordinates provided by our observation
Latitude 40°34'05.486"N (271740.71)
Longitude 98°24'40.907"W (2081666.15)
NAVD 88 Elevation. 1930.14

3-24-2011

THOMAS L. KRUEGER

NEBRASKA REGISTERED LS-448 LAND SURVEYOR THOMAS L. KRUEGER

2837 West Highway 6, Ste. 204 • Hastings, Nebraska 68901 • 402.462.5657 • 402.461.3305 fax • www.jeo.com

Job:HGL 6310 Units:USSurveyFeet

PointName	Northing	Easting	Elevation	Code
100	270056.2	2083477	1909.823	MW-45C PAD
101	270056	2083477	1911.748	MW-45C TOP PVC
102	270046.8	2083476	1911.384	MW-45D TOP PVC
103	270046.9	2083476	1909.464	MW-45D PAD
104	270399.9	2085404	1916.983	MW-12D PAD
105	270399.7	2085404	1918.89	MW-12D TOP PVC
106	267054.6	2084287	1915.447	MW-16A TOP CASING EAST SIDE
107	267054.5	2084287	1914.944	MW-16A TOP PVC EAST SIDE
108	267048.6	2084286	1915.075	MW-16C TOP PVC SOUTH SIDE
109	267048.4	2084286	1915.467	MW-16C TOP CASING SOUTH SIDE
110	266708.3	2089674	1914.988	MW-41-D2 PAD
111	266708	2089674	1916.957	MW-41-D2 TOP PVC
112	266698.7	2089674	1917.192	MW-41-D1 TOP PVC
113	266698.8	2089674	1915.236	MW-41-D1 PAD
114	265404.4	2097605	1908.454	MW-43E PAD
115	265404.2	2097605	1910.344	MW-43E TOP PVC
116	265395.2	2097606	1910.297	MW-43D TOP PVC
117	265395.4	2097606	1908.354	MW-43D PAD
118	269162.9	2100143	1902.229	MW-42E PAD
119	269162.7	2100143	1904.125	MW-42E TOP PVC
120	269167.9	2100135	1904.033	MW-42D TOP PVC
121	269168.1	2100136	1902.066	MW-42D PAD
122	271217.9	2079158	1939.492	HTW 40-PAD
123	271217.8	2079158	1941.646	HTW 40- TOP PVC
124	269063.8	2089632	1911.025	MW46-D2 PAD
125	269063.7	2089632	1913.025	MW46-D2 TOP PVC
126	269055.3	2089633	1910.966	MW46-D1 PAD
127	269055.2	2089633	1912.846	MW46-D1 TOP PVC
128	267552.3	2105258	1885.304	MW44-D PAD
129	267552	2105258	1885.054	MW44-D TOP PVC
130	267541	2105259	1885.298	MW44-E PAD
131	267540.7	2105259	1885.048	MW44-E TOP PVC

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE =   ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = MARCH 21, 2011
 LH1383 ***********************************************************************
 LH1383  CBN          -  This is a Cooperative Base Network Control Station.
 LH1383  PACS         -  This is a Primary Airport Control Station.
 LH1383  DESIGNATION -  HSI ARP 2
 LH1383  PID          -  LH1383
 LH1383  STATE/COUNTY-  NE/ADAMS
 LH1383  USGS QUAD    -  HASTINGS WEST (1983)
 LH1383
 LH1383                         *CURRENT SURVEY CONTROL
 LH1383  ___________________________________________________________________
 LH1383* NAD 83(2007)-  40 36 10.38968(N)    098 25 36.87177(W)     ADJUSTED
 LH1383* NAVD 88      -       592.467  (meters)    1943.79   (feet)  ADJUSTED
 LH1383  ___________________________________________________________________
 LH1383  EPOCH DATE   -        2002.00
 LH1383  X            -    -710,732.227 (meters)                       COMP
 LH1383  Y            -  -4,797,477.302 (meters)                       COMP
 LH1383  Z            -   4,129,410.029 (meters)                       COMP
 LH1383  LAPLACE CORR-           -2.23  (seconds)                      DEFLEC09
 LH1383  ELLIP HEIGHT-          567.238 (meters)          (02/10/07) ADJUSTED
 LH1383  GEOID HEIGHT-          -25.23  (meters)                       GEOID09
 LH1383  DYNAMIC HT   -         592.135 (meters)    1942.70   (feet)  COMP
 LH1383
 LH1383  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 LH1383  Type     PID    Designation                     North   East  Ellip
 LH1383  -------------------------------------------------------------------
 LH1383  NETWORK LH1383 HSI ARP 2                          0.33   0.22   0.73
 LH1383  -------------------------------------------------------------------
 LH1383  MODELED GRAV-      980,045.4   (mgal)                      NAVD 88
 LH1383
 LH1383  VERT ORDER   -  FIRST     CLASS II
 LH1383
 LH1383.This mark is at Hastings Municipal Airport (HSI)
 LH1383
 LH1383.The horizontal coordinates were established by GPS observations
 LH1383.and adjusted by the National Geodetic Survey in February 2007.
 LH1383
 LH1383.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 LH1383.See National Readjustment for more information.
 LH1383.The horizontal coordinates are valid at the epoch date displayed above.
 LH1383.The epoch date for horizontal control is a decimal equivalence
 LH1383.of Year/Month/Day.
 LH1383
 LH1383.The orthometric height was determined by differential leveling and
 LH1383.adjusted in May 1993.
 LH1383
 LH1383.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 LH1383
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LH1383.The Laplace correction was computed from DEFLEC09 derived deflections.
LH1383
LH1383.The ellipsoidal height was determined by GPS observations
LH1383.and is referenced to NAD 83.
LH1383
LH1383.The geoid height was determined by GEOID09.
LH1383
LH1383.The dynamic height is computed by dividing the NAVD 88
LH1383.geopotential number by the normal gravity value computed on the
LH1383.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
LH1383.degrees latitude (g = 980.6199 gals.).
LH1383
LH1383.The modeled gravity was interpolated from observed gravity values.
LH1383
LH1383;                    North         East     Units Scale Factor Converg.
LH1383;SPC NE       -    86,654.000   633,107.079   MT  0.99978171   +1 02 32.9
LH1383;SPC NE       -   284,297.33  2,077,118.81   sFT  0.99978171   +1 02 32.9
LH1383;UTM  14      - 4,494,832.982   548,486.086   MT  0.99962894   +0 22 22.7
LH1383
LH1383!             -  Elev Factor  x  Scale Factor =   Combined Factor
LH1383!SPC NE       -   0.99991103  x   0.99978171  =   0.99969276
LH1383!UTM  14      -   0.99991103  x   0.99962894  =   0.99954000
LH1383
LH1383:                Primary Azimuth Mark                     Grid Az
LH1383:SPC NE       -  HSI AP STA B                             132 55 14.9
LH1383:UTM  14      -  HSI AP STA B                             133 35 25.1
LH1383
LH1383|---------------------------------------------------------------------|
LH1383| PID    Reference Object                     Distance      Geod. Az  |
LH1383|                                                          dddmmss.s  |
LH1383| LH1381 HSI AP STA B                       APPROX. 0.6 KM 1335747.8  |
LH1383| AB4143 HSI AP STA A                       APPROX. 1.1 KM 3384556.2  |
LH1383|---------------------------------------------------------------------|
LH1383
LH1383                         SUPERSEDED SURVEY CONTROL
LH1383
LH1383  ELLIP H (07/10/01)  567.225  (m)                        GP(       ) 4 1
LH1383  NAD 83(1995)-  40 36 10.38950(N)    098 25 36.87123(W) AD(       ) B
LH1383  ELLIP H (06/25/96)  567.273  (m)                        GP(       ) 1 1
LH1383  NAD 83(1986)-  40 36 10.39666(N)    098 25 36.87519(W) AD(       ) 1
LH1383  NAVD 88 (06/25/96)  592.47   (m)         1943.8     (f) LEVELING    3
LH1383  NGVD 29 (02/23/90)  592.1    (m)         1943.      (f) GPS OBS
LH1383
LH1383.Superseded values are not recommended for survey control.
LH1383.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
LH1383.See file dsdata.txt to determine how the superseded data were derived.
LH1383
LH1383_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TNK4848694832(NAD 83)
LH1383_MARKER: DT = TOPOGRAPHIC STATION DISK
LH1383_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
LH1383_SP_SET: CONCRETE POST
LH1383_STAMPING: ARP 2 HSI 1976
LH1383_MARK LOGO: CGS
LH1383_MAGNETIC: N = NO MAGNETIC MATERIAL
LH1383_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
LH1383+STABILITY: SURFACE MOTION
LH1383_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LH1383+SATELLITE: SATELLITE OBSERVATIONS - May 11, 2006
LH1383
LH1383  HISTORY     - Date     Condition        Report By
```

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LH1383  HISTORY     - 1976     MONUMENTED       NGS
LH1383  HISTORY     - 19890418 GOOD             NGS
LH1383  HISTORY     - 19900615 GOOD             NGS
LH1383  HISTORY     - 19911008 GOOD             NGS
LH1383  HISTORY     - 19950724 GOOD             NGS
LH1383  HISTORY     - 19970716 GOOD             NGS
LH1383  HISTORY     - 20000601 GOOD             NEDR
LH1383  HISTORY     - 20021210 GOOD             NEDR
LH1383  HISTORY     - 20040309 GOOD             NDA
LH1383  HISTORY     - 20060511 GOOD             USGS
LH1383  HISTORY     - 20100427 GOOD             JEOCON
LH1383
LH1383                          STATION DESCRIPTION
LH1383
LH1383'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989
LH1383'THE STATION IS LOCATED ABOUT 3.5 KM (2.15 MI) NORTHWEST OF HASTINGS,
LH1383'AT THE HASTINGS MUNICIPAL AIRPORT.  OWNERSHIP--HASTINGS AIRPORT
LH1383'AUTHORITY, P.O. BOX 1143, HASTINGS, NE 68901.  AIRPORT MANAGER IS
LH1383'JERRY YEAGER, TELEPHONE IS 402-462-6422.
LH1383'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 6, 34 AND 281
LH1383'SOUTH, ON THE SOUTH SIDE OF HASTINGS, GO WEST ON HIGHWAYS 6 AND 34 FOR
LH1383'1.62 KM (1.00 MI) TO A CROSSROAD.  TURN RIGHT AND GO NORTH ON MARIAN
LH1383'ROAD FOR 3.21 KM (2.00 MI) TO A CROSSROAD.  TURN LEFT AND GO WEST ON
LH1383'12TH STREET FOR 0.39 KM (0.25 MI) TO AN AIRPORT GATE ON THE RIGHT AT
LH1383'AN AIRPORT BEACON.  TURN RIGHT AND GO NORTH THROUGH THE GATE, THEN
LH1383'ACROSS AN APRON, THEN A TAXIWAY FOR 0.64 KM (0.40 MI) TO A TAXIWAY ON
LH1383'THE RIGHT.  TURN RIGHT AND GO NORTHEAST FOR 0.08 KM (0.05 MI) TO THE
LH1383'STATION ON THE LEFT.
LH1383'THE STATION MARK IS SET ABOUT 150 M (492.1 FT) SOUTHWEST OF RUNWAY
LH1383'14-32, 71.0 M (232.9 FT) NORTHEAST OF A TAXIWAY EDGE, 30.3 M
LH1383'(99.4 FT) NORTHWEST OF A TAXIWAY EDGE, 39.5 M (129.6 FT)
LH1383'NORTH-NORTHEAST OF TAXIWAY LIGHT --53--, 29.0 M (95.1 FT)
LH1383'NORTH-NORTHWEST OF TAXIWAY LIGHT --54--, 0.3 M (1.0 FT) SOUTHWEST OF A
LH1383'WITNESS POST AND IS RECESSED 1 CM BELOW THE SURFACE.
LH1383'DESCRIBED BY G.R.HEID.
LH1383
LH1383                          STATION RECOVERY (1990)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
LH1383'THE STATION IS LOCATED NEAR THE INTERSECTIONS OF RWYS 04-22 AND 14-32.
LH1383'IT IS 226 FT (68.9 M) SE OF THE SOUTH EDGE RWY 04-22, 232.5 FT (70.9
LH1383'M) NE OF THE EAST EDGE OF A TAXIWAY, 99.4 FT (30.3 M) NW OF THE NORTH
LH1383'EDGE OF A TAXIWAY.  THE STATION IS A STANDARD NOS DISK SET FLUSH WITH
LH1383'THE GROUND AND STAMPED, ARP 2 HSI 1976.  NOTE, NO CENTER POINT WAS
LH1383'STAMPED IN THE DISK DURING THE 1976 SURVEY SO IT WAS DONE THIS SURVEY
LH1383'WITH A CENTER PUNCH.
LH1383
LH1383                          STATION RECOVERY (1991)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991
LH1383'2.8 KM (1.75 MI) WESTERLY ALONG WEST 12TH STREET FROM THE JUNCTION OF
LH1383'U.S. HIGHWAY 281 IN HASTINGS, THENCE 0.1 KM (0.05 MI) NORTH ALONG A
LH1383'PARKING LOT, THENCE 0.6 KM (0.35 MI) NORTHEASTERLY ALONG A TAXIWAY,
LH1383'THENCE 0.1 KM (0.05 MI) NORTHEASTERLY ALONG A TAXIWAY, 120.0 M (393.7
LH1383'FT) NORTHWEST OF A WINDSOCK, 120.0 M (393.7 FT) SOUTHWEST OF THE
LH1383'SOUTHWEST EDGE OF RUNWAY 17-32, 71.0 M (232.9 FT) NORTHEAST OF THE
LH1383'NORTHEAST EDGE OF A TAXIWAY, 30.3 M (99.4 FT) NORTHWEST OF THE
LH1383'NORTHWEST EDGE OF THE TAXIWAY, 1.5 M (4.9 FT) ABOVE THE LEVEL OF THE
LH1383'TAXIWAY, 0.3 M (1.0 FT) SOUTHEAST OF A WITNESS POST, AND THE MONUMENT
LH1383'IS FLUSH WITH THE GROUND SURFACE.
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LH1383
LH1383                          STATION RECOVERY (1995)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)
LH1383'THE STATION IS LOCATED ABOUT 4.8 MI (7.7 KM) EAST-NORTHEAST OF
LH1383'JUNIATA, ON THE NORTHWEST SIDE OF HASTINGS AT THE HASTINGS MUNICIPAL
LH1383'AIRPORT AND IN A GRASS AREA SOUTH OF THE INTERSECTION OF THE RUNWAYS.
LH1383'OWNERSHIP--HASTINGS AIRPORT AUTHORITY, PO BOX 1143, HASTINGS NE 68901.
LH1383'AIRPORT MANAGER IS JERRY YEAGER, PHONE (402) 462-6422.  TO REACH THE
LH1383'STATION FROM THE JUNCTION OF U.S. HIGHWAYS 6, 34 AND 281 NORTH ON THE
LH1383'SOUTH SIDE OF HASTINGS, GO NORTH ON U.S. HIGHWAY 281/34 FOR 2.0 MI
LH1383'(3.2 KM) TO AN INTERSECTION, TURN LEFT AND GO WEST ON 12TH STREET FOR
LH1383'1.5 MI (2.4 KM) TO AN INTERSECTION (MARIAN ROAD), CONTINUE AHEAD AND
LH1383'GO WEST ON 12TH STREET FOR 0.25 MI (0.40 KM) TO A GATE ON THE RIGHT
LH1383'(JUST PAST THE BEACON), TURN RIGHT, PASS THROUGH GATE AND GO NORTH
LH1383'ACROSS THE APRON FOR 0.1 MI (0.2 KM) TO A TAXIWAY LEADING TO THE
LH1383'NORTH, GO NORTH THEN NORTHWEST FOLLOWING THE TAXIWAY FOR 0.25 MI (0.40
LH1383'KM) TO THE INTERSECTION WITH A NE/SW PARALLEL TAXIWAY, TURN RIGHT AND
LH1383'GO NORTHEAST ON THE PARALLEL TAXIWAY (B) FOR 0.05 MI (0.08 KM) TO THE
LH1383'STATION ON THE LEFT ABOUT 4 FT (1.2 M) HIGHER THAN THE TAXIWAY.  THE
LH1383'STATION IS 393.8 FT (120.0 M) NORTHWEST OF A WINDSOCK, 404 FT (123.1
LH1383'M) SOUTHWEST OF THE SOUTHWEST EDGE OF RUNWAY 14/32, 232.9 FT (71.0 M)
LH1383'NORTHEAST OF THE NORTHEAST EDGE OF A TAXIWAY, 99.4 FT (30.3 M)
LH1383'NORTHWEST OF THE NORTHWEST EDGE OF THE TAXIWAY AND 1.0 FT (0.3 M)
LH1383'SOUTHEAST OF A WITNESS POST.  STATION IS RECESSED 4 CM BELOW THE
LH1383'GROUND.  NOTE--THIS STATION WAS USED AS AN AREA NAVIGATION APPROACH
LH1383'PRIMARY AIRPORT CONTROL STATION.
LH1383
LH1383                          STATION RECOVERY (1997)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (AJL)
LH1383'RECOVERED AS DESCRIBED.
LH1383
LH1383                          STATION RECOVERY (2000)
LH1383
LH1383'RECOVERY NOTE BY NEBRASKA ROADS DEPARTMENT 2000 (JAO)
LH1383'RECOVERED AS DESCRIBED.
LH1383
LH1383                          STATION RECOVERY (2002)
LH1383
LH1383'RECOVERY NOTE BY NEBRASKA ROADS DEPARTMENT 2002
LH1383'RECOVERED IN GOOD CONDITION.
LH1383
LH1383                          STATION RECOVERY (2004)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL DEPARTMENT OF AERONAUTICS 2004 (BJS)
LH1383'OWNERSHIP - CITY OF HASTINGS, 220 N. HASTINGS AVE., HASTINGS, NE
LH1383'68901. CITY ENGINEER IS DAVID WACKER, (402) 461-2330
LH1383
LH1383                          STATION RECOVERY (2006)
LH1383
LH1383'RECOVERY NOTE BY US GEOLOGICAL SURVEY 2006 (BKW)
LH1383'RECOVERED IN GOOD CONDITION.
LH1383
LH1383                          STATION RECOVERY (2010)
LH1383
LH1383'RECOVERY NOTE BY JEO CONSULTING GROUP INC 2010 (JG)
LH1383'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
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Elapsed Time = 00:00:00

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

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DATABASE =  ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = MARCH 21, 2011
 LH1476 ***********************************************************************
 LH1476  DESIGNATION -  Z 438
 LH1476  PID         -  LH1476
 LH1476  STATE/COUNTY-  NE/ADAMS
 LH1476  USGS QUAD   -  HASTINGS WEST (1983)
 LH1476
 LH1476                        *CURRENT SURVEY CONTROL
 LH1476  ___________________________________________________________________
 LH1476* NAD 83(1986)-  40 35 45.     (N)     098 24 41.     (W)     SCALED
 LH1476* NAVD 88     -       587.570  (meters)    1927.72    (feet)  ADJUSTED
 LH1476  ___________________________________________________________________
 LH1476  GEOID HEIGHT-         -25.25  (meters)                      GEOID09
 LH1476  DYNAMIC HT  -         587.241 (meters)    1926.64   (feet)  COMP
 LH1476  MODELED GRAV-     980,046.1   (mgal)                        NAVD 88
 LH1476
 LH1476  VERT ORDER  -  FIRST     CLASS II
 LH1476
 LH1476.The horizontal coordinates were scaled from a topographic map and have
 LH1476.an estimated accuracy of +/- 6 seconds.
 LH1476
 LH1476.The orthometric height was determined by differential leveling and
 LH1476.adjusted in May 1993.
 LH1476
 LH1476.The geoid height was determined by GEOID09.
 LH1476
 LH1476.The dynamic height is computed by dividing the NAVD 88
 LH1476.geopotential number by the normal gravity value computed on the
 LH1476.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 LH1476.degrees latitude (g = 980.6199 gals.).
 LH1476
 LH1476.The modeled gravity was interpolated from observed gravity values.
 LH1476
 LH1476;                   North         East     Units  Estimated Accuracy
 LH1476;SPC NE       -    85,900.      634,440.      MT  (+/- 180 meters Scaled)
 LH1476
 LH1476                         SUPERSEDED SURVEY CONTROL
 LH1476
 LH1476.No superseded survey control is available for this station.
 LH1476
 LH1476_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TNK498940(NAD 83)
 LH1476_MARKER: I = METAL ROD
 LH1476_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
 LH1476_SP_SET: STAINLESS STEEL ROD
 LH1476_STAMPING: Z 438 1991
 LH1476_MARK LOGO: NGS
 LH1476_PROJECTION: FLUSH
 LH1476_MAGNETIC: I = MARKER IS A STEEL ROD
```

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LH1476_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
LH1476_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LH1476+SATELLITE: SATELLITE OBSERVATIONS - 1991
LH1476_ROD/PIPE-DEPTH: 14.3 meters
LH1476
LH1476  HISTORY     - Date     Condition         Report By
LH1476  HISTORY     - 1991     MONUMENTED        NGS
LH1476  HISTORY     - 20100427 GOOD              JEOCON
LH1476
LH1476                          STATION DESCRIPTION
LH1476
LH1476'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991
LH1476'IN HASTINGS, AT THE INTERSECTION OF CRANE AVENUE AND HOME STREET,
LH1476'30.6 M (100.4 FT) WEST OF THE AVENUE CENTER, 6.8 M (22.3 FT) NORTH OF
LH1476'AND LEVEL WITH THE STREET CENTER, 2.2 M (7.2 FT) SOUTH OF A
LH1476'CHAIN-LINK FENCE AND WITNESS POST, AND 0.7 WEST OF A UTILITY POLE.
LH1476'NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.
LH1476
LH1476                          STATION RECOVERY (2010)
LH1476
LH1476'RECOVERY NOTE BY JEO CONSULTING GROUP INC 2010 (JG)
LH1476'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:00
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JEO Consulting Group, Inc.

Engineering
Architecture
Surveying
Planning

To HGL:

I certify to the best of my knowledge that the information provided to you for work completed prior to 6-3-2010 was made by me or under my direct supervision and is true and accurate horizontally within .10 foot and vertically within .01 foot as indicated by our equipment. Each time prior to 6-3-2010 that cp-2 was occupied and checked into BM NGS LH1383, the horizontal tolerance was less than .10 foot and the vertical tolerance was less than .01 foot. CP-2 is a 5/8" rebar that was established by occupying NGS Harn point # LH1383 and locating cp-2, then checking in to BM NGS LH-1476. At check-in the horizontal tolerance was within .10 foot and our vertical tolerance was within .01 foot. I have attached the NGS data sheets that were used for horizontal and vertical control for your knowledge.

Bench Mark Data.
P.I.D. LH1383
LOCATION Hastings Airport.
NAD 83 Coordinates
Latitude 40°36'10.39"N (284297.33)
Longitude 98°25'36.87"W (2077118.81)
NAVD 88 Elevation. 1943.79

P.I.D. LH1476
Location Hastings NE
NAD 83 Coordinates provided by our observation.
Latitude 40°35'46.08"N (281916.72)
Longitude 98°24'41.07"W (2081466.68)
NAVD 88 Elevation. 1927.72

CP-2 5/8" Rebar
Location Hastings NE
NAD 83 Coordinates provided by our observation
Latitude 40°34'05.486"N (271740.71)
Longitude 98°24'40.907"W (2081666.15)
NAVD 88 Elevation. 1930.14

3-24-2011

THOMAS L. KRUEGER

NEBRASKA REGISTERED LS-448 LAND SURVEYOR THOMAS L. KRUEGER

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
406	271240.41	2080539.87	1930.219	MW2-A MARK W. SIDE CASING
407	271240.469	2080539.389	1927.33	MW2-A CONC. W. SIDE
408	271214.419	2079067.607	1940.802	MW8-A CONC. N. SIDE
409	271214.203	2079067.544	1943.221	MW8-A MARK. N. SIDE
410	271206.54	2079068.016	1940.74	MW33 CONC. N. SIDE
411	271206.314	2079068.057	1942.172	MW33 MARK. N. SIDE
412	268948.213	2079469.536	1923.945	IRRIGATION WELL E. SIDE
413	269088.781	2079692.537	1923.838	MW7-B MARK N. SIDE
414	269089.002	2079692.515	1920.887	MW7-B CONC N. SIDE
415	269088.475	2079699.468	1920.922	MW7-A CONC W. SIDE
416	269088.475	2079699.7	1923.22	MW7-A MARK W. SIDE
425	270590.926	2080164.407	1927.081	MW1-A MARK N. SIDE
426	270591.307	2080164.44	1925.797	MW1-A CONC. N. SIDE
427	270863.284	2080136.846	1926.384	IW-1 CONC W. SIDE
428	270863.284	2080138.346	1921.184	IW-1 TOP FLANGE
429	270331.729	2080129.836	1925.274	IW-2 CONC W. SIDE
430	270331.729	2080131.336	1919.984	IW-2 TOP FLANGE
431	269947.071	2080745.584	1931.722	MW5-B MARK N. SIDE
432	269946.969	2080745.913	1930.118	MW5-B CONC N. SIDE
433	269943.59	2080752.723	1930.062	MW5-A CONC S. SIDE
434	269943.836	2080752.777	1930.259	MW5-A MARK S. SIDE
435	269930.791	2080740.508	1931.873	MW5-D MARK S. SIDE
436	269930.284	2080740.425	1929.848	MW5-D CONC S. SIDE
441	272193.217	2080628.198	1925.397	MW9-A CONC. S. SIDE
442	272193.736	2080628.145	1928.031	MW9-A MARK. S. SIDE
443	272985.052	2080619.317	1929.148	IRRIGATION WELL TOP CONC S. SIDE
453	268893.975	2080785.037	1933.216	IRRIGATION WELL S. SIDE
454	271826.499	2083509.07	1911.838	MW11-A MARK N. SIDE
455	271826.733	2083509.15	1912.28	MW11-A CONC. N. SIDE
456	272535.126	2081973.519	1923.809	MW10-A CONC. S. SIDE
457	272535.399	2081973.782	1923.479	MW10-A MARK. S. SIDE
458	272530.51	2081982.385	1923.353	MW10-B MARK. S. SIDE
459	272530.374	2081982.325	1923.701	MW10-B CONC. S. SIDE
460	270969.139	2084136.925	1909.556	MW14-A CONC. N. SIDE
461	270968.774	2084137.323	1911.691	MW14-A MARK. N. SIDE
501	268796.556	2082958.916	1903.703	MW17-A . MARK N. SIDE
502	268796.863	2082958.998	1901.854	MW17-A CONC. N. SIDE
503	268796.81	2082964.318	1901.729	MW17-D CONC. N. SIDE
504	268796.267	2082964.251	1902.933	MW17-D MARK. S. SIDE
505	268795.876	2082969.298	1902.905	MW17-C MARK. S. SIDE
506	268796.531	2082969.353	1901.674	MW17-C CONC. N. SIDE
507	268694.09	2085938.35	1910.637	MW18-A CONC. N. SIDE
508	268693.818	2085938.384	1912.889	MW18-A MARK. N. SIDE
509	268704.658	2085938.735	1913.318	MW18-D MARK. S. SIDE
510	268704.357	2085938.789	1910.605	MW18-D CONC. S. SIDE

511	268683.697	2085938.354	1910.53	MW18-C CONC. N. SIDE
512	268683.36	2085938.592	1913.086	MW18-C MARK. N. SIDE
400	271237.345	2081216.968	1931.993	MW06-A MARK W. SIDE CASING
401	271244.17	2081221.205	1931.141	MW06-D MARK W. SIDE CASING
402	271244.606	2081208.806	1932.131	MW06-E MARK W. SIDE CASING
403	271237.522	2081216.949	1929.48	MW06-A CONC. W. SIDE
404	271244.286	2081221.035	1929.455	MW06-D CONC. W. SIDE
405	271244.474	2081208.683	1929.645	MW06-E CONC. S. SIDE
417	270761.279	2080777.783	1931.072	MW3-B CONC. S. SIDE
418	270761.378	2080778.055	1932.754	MW3-B MARK. S. SIDE
419	270755.17	2080773.994	1934.269	MW3-A MARK. N. SIDE
420	270755.215	2080774.174	1930.991	MW3-A CONC N. SIDE
421	270744.026	2080767.887	1930.989	MW3-E CONC N. SIDE
422	270744.057	2080767.604	1932.254	MW3-E MARK N. SIDE
423	270763.009	2080754.275	1933.37	MW3-D MARK S. SIDE
424	270762.69	2080754.122	1931.463	MW3-D CONC S. SIDE
437	270342.585	2080832.776	1931.375	MW4-B MARK W. SIDE
438	270342.658	2080832.558	1931.699	MW4-B CONC W. SIDE
439	270342.263	2080827.087	1931.843	MW4-A CONC N. SIDE
440	270341.995	2080827.075	1931.601	MW4-A MARK N. SIDE
444	270955	2081333.115	1927.812	MW19-A/C E. SIDE CONC.
445	270955.133	2081332.85	1929.894	MW19-A/C TOP CAP
446	270597.445	2081202.233	1929.929	MW20-A/C/D/E TOP CAP
447	270597.443	2081202.477	1927.97	MW20-A/C/D/E E. SIDE CONC.
448	270331.739	2081137.966	1929.046	IRRIGATION WELL W. SIDE
449	270271.723	2081095.43	1930.983	MW30-A/C/D/E TOP CAP
450	270271.723	2081095.991	1929.032	MW30-A/C/D/E CONC. E. SIDE
451	269550.764	2080816.035	1932.347	MW31-A/C TOP CAP
452	269550.51	2080816.429	1930.084	MW31-A/C E. SIDE CONC
462	270368.902	2081015.694	1929.647	MW13-C MARK S.SIDE
463	270368.734	2081015.662	1928.742	MW13-C CONC. S.SIDE
464	270393.418	2081014.058	1928.89	MW13-C CONC. W.SIDE
465	270393.318	2081014.304	1930.428	MW13-C MARK W.SIDE
466	270754.779	2081007.567	1930.084	RW-6 REPLACEMENT WELL GROUND
467	270754.887	2081007.6	1931.616	RW-6 REP. WELL BRACKET E. SIDE CASING
468	270325.007	2080992.501	1929.138	RW-3 BRASS PLATE S. SIDE
469	270327.507	2080992.501	1926.138	RW-3 TOP FLANGE
470	270193.287	2080948.172	1931.844	RW-8 BRASS PLATE E. SIDE
471	270193.287	2080946.173	1928.934	RW-8 TOP FLANGE
472	270056.709	2080897.538	1929.051	RW-4 BRASS PLATE E. SIDE
473	270056.71	2080895.538	1926.101	RW-4 TOP FLANGE
474	270462.219	2080961.017	1930.385	RW-7 CONC. N. SIDE
475	270460.719	2080961.017	1927.385	RW-7 TOP FLANGE
476	270637.378	2080877.116	1929.457	RW-2 BRASS PLATE W. SIDE
477	270636.079	2080877.866	1926.417	RW-2 TOP FLANGE
478	270490.798	2080714.177	1931.347	SVE-2 TOP N. SIDE
479	270490.398	2080714.177	1931.177	SVE-2 TOP PIPE

480	270553.785	2080612.882	1931.708	RW-UNLABLED BRASS. PLATE W. SIDE
481	270553.785	2080615.882	1928.868	RW-UNLABLED TOP FLANGE
482	270417.31	2080729.351	1932.111	SVE-05 TOP W. SIDE
483	270417.31	2080729.751	1931.771	SVE-05 TOP PIPE
484	270380.987	2080804.355	1931.702	SVE-06 TOP W. SIDE
485	270380.987	2080804.755	1931.582	SVE-06 TOP PIPE
486	270373.081	2080850.415	1930.862	SVE-11 TOP RIM N. SIDE
487	270744.436	2081004.215	1929.753	RW-6 BRASS PLATE E. SIDE OLD
488	270745.618	2081004.007	1926.823	RW-6 TOP FLANGE OLD
489	270923.755	2080884.15	1931.602	RW-1 BRASS PLATE E. SIDE
490	270924.258	2080881.294	1928.362	RW-1 TOP FLANGE
491	270411.814	2080657.696	1931.729	SVE-10 TOP RIM W. SIDE
492	270382.286	2080648.617	1932.232	SVE-8 TOP RIM W. SIDE
493	270453.965	2080616.161	1931.456	SVE-4 TOP RIM W. SIDE
494	270441.785	2080591.154	1931.432	RW-5 TOP W. SIDE
495	270441.785	2080592.154	1928.232	RW-5 TOP CASING
496	270412.172	2080564.029	1931.383	SVE-7 TOP RIM W. SIDE
497	270484.194	2080523.578	1930.725	SVE-3 BRASS PLATE W. SIDE
498	270484.194	2080525.078	1927.875	SVE-3 TOP FLANGE
499	270617.947	2080716.086	1929.496	SVE-9 BRASS PLATE W. SIDE
500	270617.947	2080719.086	1926.266	SVE-9 TOP FLANGE
513	270400.162	2085390.331	1917.131	MW12-A CONC. N. SIDE
514	270399.71	2085390.335	1919.65	MW12-A MARK N. SIDE
515	270400.369	2085379.468	1919.64	MW12-C MARK N. SIDE
516	270400.535	2085379.424	1916.677	MW12-C CONC N. SIDE

PointName	Northing	Easting	Elevation	Code
110	270385	2080560	1930.293	SB-03
111	270426.6	2080592	1931.439	SB-02
112	270468.2	2080609	1931.539	SB-22
113	270450.3	2080578	1930.992	SB-01
114	270425.9	2080696	1931.697	SB-05
115	270403.2	2080690	1932.251	SB-04
116	270285	2080814	1932.608	SB-06
117	270521.7	2080613	1931.453	SB-23
118	269654.8	2080310	1929.73	SB-13
119	269814	2080365	1929.884	SB-12
120	269985.3	2080429	1930.017	SB-11
121	270168.2	2080517	1929.844	SB-09
122	270122	2080631	1929.907	SB-10
123	270220.8	2080673	1931.702	SB-08
124	270169.4	2080748	1932.079	SB-19
125	270165.7	2080791	1931.687	SB-18
126	270070.5	2080766	1931.043	SB-16
127	270032	2080805	1930.219	SB-14
128	270164.5	2080855	1930.503	SB-15
129	269821.3	2080706	1928.79	SB-30
130	269759.7	2080586	1927.394	SB-17
131	270261.3	2080485	1928.411	SB-07
100	271237.9	2079980	1924.746	SB-32
101	270706.6	2081089	1929.254	SB-28
102	270524.4	2081023	1929.531	SB-27
103	270347.4	2080962	1930.367	SB-26
104	270226.3	2080942	1931.858	SB-25
105	270772.1	2080735	1931.592	SB-31
106	270583.7	2080670	1928.735	SB-24
107	270265	2080344	1926.733	SB-20
108	270269.9	2080334	1927.257	SB-21
109	270864.4	2081036	1929.891	SB-29

Job:HGL 82509 Units:USSurveyFeet

PointName	Northing	Easting	Elevation	Code	Note
100	270600.3	2080418	1926.337	SD-04	
101	269992.7	2080244	1925.651	SD-03	
102	269555.3	2080354	1925.517	SD-06	
103	270821.8	2081211	1925.839	SD-11	
104	270306.1	2081015	1926.071	SD-10	
105	269867.4	2080858	1927.767	SD-09	
106	269151.4	2080580	1930.374	SD-08	
107	271209.1	2079971	1921.421	SD-05	
108	269014.7	2079770	1918.52	SD-02	
109	269485.8	2079758	1918.70	SD/SW-01	
110	269515.6	2089614	1915.69	TS1-01	
111	268951.8	2089638	1911.163	TS1-02	
112	268313.9	2089647	1912.514	TS1-03	
113	267650.4	2089651	1914.73	TS1-04	
114	267030.1	2089665	1916.236	TS1-05	
115	266342.5	2089665	1911.314	TS1-06	
116	264932.1	2097617	1909.40	TS2-07	
117	266250.1	2097592	1905.005	TS2-06	
118	267717.6	2097570	1901.431	TS2-05	
119	268939.5	2097554	1903.601	TS2-04	
120	270184.7	2097531	1904.645	TS2-03	
121	271456.1	2097510	1910.145	TS2-02	
122	272792.7	2097483	1910.981	TS2-01	
123	270671.2	2102760	1893.392	TS3-01	
125	269400.3	2102787	1894.151	TS3-02	
124	268057.9	2102800	1893.303	TS3-03	
126	266777.3	2102812	1890.562	TS3-04	

Job:HGL 123109	Units:USSurveyFeet				
PointName	Northing	Easting	Elevation	Code	Note
100	271300.8	2080999	1928.562	SB-40	
101	271076.4	2081192	1929.307	SB-37	
102	271160.1	2081412	1927.692	SB-38	
103	271537.4	2081550	1925.832	SB-39	
104	269706.5	2080691	1929.947	SB-35	
105	269515.2	2080620	1930.229	SB-34	
106	269199.8	2080682	1934.464	SB-33	
107	269696	2080483	1926.931	SB-36	
108	268226.8	2105246	1885.649	TS4-01	
109	267112.2	2105262	1884.475	TS4-02	
110	267313.9	2105261	1885.388	TS4-03	

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE =   ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = MARCH 21, 2011
 LH1383 ***********************************************************************
 LH1383  CBN          -  This is a Cooperative Base Network Control Station.
 LH1383  PACS         -  This is a Primary Airport Control Station.
 LH1383  DESIGNATION -  HSI ARP 2
 LH1383  PID          -  LH1383
 LH1383  STATE/COUNTY-  NE/ADAMS
 LH1383  USGS QUAD   -  HASTINGS WEST (1983)
 LH1383
 LH1383                         *CURRENT SURVEY CONTROL
 LH1383  ___________________________________________________________________
 LH1383* NAD 83(2007)-  40 36 10.38968(N)    098 25 36.87177(W)     ADJUSTED
 LH1383* NAVD 88     -       592.467  (meters)    1943.79    (feet)  ADJUSTED
 LH1383  ___________________________________________________________________
 LH1383  EPOCH DATE  -        2002.00
 LH1383  X           -    -710,732.227 (meters)                       COMP
 LH1383  Y           -  -4,797,477.302 (meters)                       COMP
 LH1383  Z           -   4,129,410.029 (meters)                       COMP
 LH1383  LAPLACE CORR-          -2.23  (seconds)                      DEFLEC09
 LH1383  ELLIP HEIGHT-         567.238 (meters)          (02/10/07) ADJUSTED
 LH1383  GEOID HEIGHT-          -25.23  (meters)                      GEOID09
 LH1383  DYNAMIC HT  -         592.135 (meters)    1942.70  (feet)   COMP
 LH1383
 LH1383  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 LH1383  Type    PID    Designation                     North   East  Ellip
 LH1383  -------------------------------------------------------------------
 LH1383  NETWORK LH1383 HSI ARP 2                        0.33   0.22   0.73
 LH1383  -------------------------------------------------------------------
 LH1383  MODELED GRAV-     980,045.4   (mgal)                     NAVD 88
 LH1383
 LH1383  VERT ORDER  -  FIRST     CLASS II
 LH1383
 LH1383.This mark is at Hastings Municipal Airport (HSI)
 LH1383
 LH1383.The horizontal coordinates were established by GPS observations
 LH1383.and adjusted by the National Geodetic Survey in February 2007.
 LH1383
 LH1383.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 LH1383.See National Readjustment for more information.
 LH1383.The horizontal coordinates are valid at the epoch date displayed above.
 LH1383.The epoch date for horizontal control is a decimal equivalence
 LH1383.of Year/Month/Day.
 LH1383
 LH1383.The orthometric height was determined by differential leveling and
 LH1383.adjusted in May 1993.
 LH1383
 LH1383.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 LH1383
```

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LH1383.The Laplace correction was computed from DEFLEC09 derived deflections.
LH1383
LH1383.The ellipsoidal height was determined by GPS observations
LH1383.and is referenced to NAD 83.
LH1383
LH1383.The geoid height was determined by GEOID09.
LH1383
LH1383.The dynamic height is computed by dividing the NAVD 88
LH1383.geopotential number by the normal gravity value computed on the
LH1383.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
LH1383.degrees latitude (g = 980.6199 gals.).
LH1383
LH1383.The modeled gravity was interpolated from observed gravity values.
LH1383
LH1383;                    North         East     Units Scale Factor Converg.
LH1383;SPC NE       -    86,654.000   633,107.079   MT  0.99978171   +1 02 32.9
LH1383;SPC NE       -   284,297.33  2,077,118.81   sFT  0.99978171   +1 02 32.9
LH1383;UTM  14      - 4,494,832.982   548,486.086   MT  0.99962894   +0 22 22.7
LH1383
LH1383!             -  Elev Factor  x  Scale Factor =   Combined Factor
LH1383!SPC NE       -   0.99991103  x   0.99978171  =   0.99969276
LH1383!UTM  14      -   0.99991103  x   0.99962894  =   0.99954000
LH1383
LH1383:                Primary Azimuth Mark                      Grid Az
LH1383:SPC NE       -  HSI AP STA B                              132 55 14.9
LH1383:UTM  14      -  HSI AP STA B                              133 35 25.1
LH1383
LH1383|---------------------------------------------------------------------|
LH1383| PID    Reference Object                     Distance      Geod. Az  |
LH1383|                                                           dddmmss.s |
LH1383| LH1381 HSI AP STA B                         APPROX. 0.6 KM 1335747.8 |
LH1383| AB4143 HSI AP STA A                         APPROX. 1.1 KM 3384556.2 |
LH1383|---------------------------------------------------------------------|
LH1383
LH1383                         SUPERSEDED SURVEY CONTROL
LH1383
LH1383  ELLIP H (07/10/01)  567.225  (m)                        GP(       ) 4 1
LH1383  NAD 83(1995)-  40 36 10.38950(N)    098 25 36.87123(W) AD(       ) B
LH1383  ELLIP H (06/25/96)  567.273  (m)                        GP(       ) 1 1
LH1383  NAD 83(1986)-  40 36 10.39666(N)    098 25 36.87519(W) AD(       ) 1
LH1383  NAVD 88 (06/25/96)  592.47   (m)         1943.8    (f) LEVELING    3
LH1383  NGVD 29 (02/23/90)  592.1    (m)         1943.     (f) GPS OBS
LH1383
LH1383.Superseded values are not recommended for survey control.
LH1383.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
LH1383.See file dsdata.txt to determine how the superseded data were derived.
LH1383
LH1383_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TNK4848694832(NAD 83)
LH1383_MARKER: DT = TOPOGRAPHIC STATION DISK
LH1383_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
LH1383_SP_SET: CONCRETE POST
LH1383_STAMPING: ARP 2 HSI 1976
LH1383_MARK LOGO: CGS
LH1383_MAGNETIC: N = NO MAGNETIC MATERIAL
LH1383_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
LH1383+STABILITY: SURFACE MOTION
LH1383_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LH1383+SATELLITE: SATELLITE OBSERVATIONS - May 11, 2006
LH1383
LH1383  HISTORY     - Date     Condition        Report By
```

```
LH1383  HISTORY     - 1976     MONUMENTED      NGS
LH1383  HISTORY     - 19890418 GOOD            NGS
LH1383  HISTORY     - 19900615 GOOD            NGS
LH1383  HISTORY     - 19911008 GOOD            NGS
LH1383  HISTORY     - 19950724 GOOD            NGS
LH1383  HISTORY     - 19970716 GOOD            NGS
LH1383  HISTORY     - 20000601 GOOD            NEDR
LH1383  HISTORY     - 20021210 GOOD            NEDR
LH1383  HISTORY     - 20040309 GOOD            NDA
LH1383  HISTORY     - 20060511 GOOD            USGS
LH1383  HISTORY     - 20100427 GOOD            JEOCON
LH1383
LH1383                          STATION DESCRIPTION
LH1383
LH1383'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989
LH1383'THE STATION IS LOCATED ABOUT 3.5 KM (2.15 MI) NORTHWEST OF HASTINGS,
LH1383'AT THE HASTINGS MUNICIPAL AIRPORT.  OWNERSHIP--HASTINGS AIRPORT
LH1383'AUTHORITY, P.O. BOX 1143, HASTINGS, NE 68901.  AIRPORT MANAGER IS
LH1383'JERRY YEAGER, TELEPHONE IS 402-462-6422.
LH1383'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 6, 34 AND 281
LH1383'SOUTH, ON THE SOUTH SIDE OF HASTINGS, GO WEST ON HIGHWAYS 6 AND 34 FOR
LH1383'1.62 KM (1.00 MI) TO A CROSSROAD.  TURN RIGHT AND GO NORTH ON MARIAN
LH1383'ROAD FOR 3.21 KM (2.00 MI) TO A CROSSROAD.  TURN LEFT AND GO WEST ON
LH1383'12TH STREET FOR 0.39 KM (0.25 MI) TO AN AIRPORT GATE ON THE RIGHT AT
LH1383'AN AIRPORT BEACON.  TURN RIGHT AND GO NORTH THROUGH THE GATE, THEN
LH1383'ACROSS AN APRON, THEN A TAXIWAY FOR 0.64 KM (0.40 MI) TO A TAXIWAY ON
LH1383'THE RIGHT.  TURN RIGHT AND GO NORTHEAST FOR 0.08 KM (0.05 MI) TO THE
LH1383'STATION ON THE LEFT.
LH1383'THE STATION MARK IS SET ABOUT 150 M (492.1 FT) SOUTHWEST OF RUNWAY
LH1383'14-32, 71.0 M (232.9 FT) NORTHEAST OF A TAXIWAY EDGE, 30.3 M
LH1383'(99.4 FT) NORTHWEST OF A TAXIWAY EDGE, 39.5 M (129.6 FT)
LH1383'NORTH-NORTHEAST OF TAXIWAY LIGHT --53--, 29.0 M (95.1 FT)
LH1383'NORTH-NORTHWEST OF TAXIWAY LIGHT --54--, 0.3 M (1.0 FT) SOUTHWEST OF A
LH1383'WITNESS POST AND IS RECESSED 1 CM BELOW THE SURFACE.
LH1383'DESCRIBED BY G.R.HEID.
LH1383
LH1383                          STATION RECOVERY (1990)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990
LH1383'THE STATION IS LOCATED NEAR THE INTERSECTIONS OF RWYS 04-22 AND 14-32.
LH1383'IT IS 226 FT (68.9 M) SE OF THE SOUTH EDGE RWY 04-22, 232.5 FT (70.9
LH1383'M) NE OF THE EAST EDGE OF A TAXIWAY, 99.4 FT (30.3 M) NW OF THE NORTH
LH1383'EDGE OF A TAXIWAY.  THE STATION IS A STANDARD NOS DISK SET FLUSH WITH
LH1383'THE GROUND AND STAMPED, ARP 2 HSI 1976.  NOTE, NO CENTER POINT WAS
LH1383'STAMPED IN THE DISK DURING THE 1976 SURVEY SO IT WAS DONE THIS SURVEY
LH1383'WITH A CENTER PUNCH.
LH1383
LH1383                          STATION RECOVERY (1991)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991
LH1383'2.8 KM (1.75 MI) WESTERLY ALONG WEST 12TH STREET FROM THE JUNCTION OF
LH1383'U.S. HIGHWAY 281 IN HASTINGS, THENCE 0.1 KM (0.05 MI) NORTH ALONG A
LH1383'PARKING LOT, THENCE 0.6 KM (0.35 MI) NORTHEASTERLY ALONG A TAXIWAY,
LH1383'THENCE 0.1 KM (0.05 MI) NORTHEASTERLY ALONG A TAXIWAY, 120.0 M (393.7
LH1383'FT) NORTHWEST OF A WINDSOCK, 120.0 M (393.7 FT) SOUTHWEST OF THE
LH1383'SOUTHWEST EDGE OF RUNWAY 17-32, 71.0 M (232.9 FT) NORTHEAST OF THE
LH1383'NORTHEAST EDGE OF A TAXIWAY, 30.3 M (99.4 FT) NORTHWEST OF THE
LH1383'NORTHWEST EDGE OF THE TAXIWAY, 1.5 M (4.9 FT) ABOVE THE LEVEL OF THE
LH1383'TAXIWAY, 0.3 M (1.0 FT) SOUTHEAST OF A WITNESS POST, AND THE MONUMENT
LH1383'IS FLUSH WITH THE GROUND SURFACE.
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```
LH1383
LH1383                          STATION RECOVERY (1995)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)
LH1383'THE STATION IS LOCATED ABOUT 4.8 MI (7.7 KM) EAST-NORTHEAST OF
LH1383'JUNIATA, ON THE NORTHWEST SIDE OF HASTINGS AT THE HASTINGS MUNICIPAL
LH1383'AIRPORT AND IN A GRASS AREA SOUTH OF THE INTERSECTION OF THE RUNWAYS.
LH1383'OWNERSHIP--HASTINGS AIRPORT AUTHORITY, PO BOX 1143, HASTINGS NE 68901.
LH1383'AIRPORT MANAGER IS JERRY YEAGER, PHONE (402) 462-6422.  TO REACH THE
LH1383'STATION FROM THE JUNCTION OF U.S. HIGHWAYS 6, 34 AND 281 NORTH ON THE
LH1383'SOUTH SIDE OF HASTINGS, GO NORTH ON U.S. HIGHWAY 281/34 FOR 2.0 MI
LH1383'(3.2 KM) TO AN INTERSECTION, TURN LEFT AND GO WEST ON 12TH STREET FOR
LH1383'1.5 MI (2.4 KM) TO AN INTERSECTION (MARIAN ROAD), CONTINUE AHEAD AND
LH1383'GO WEST ON 12TH STREET FOR 0.25 MI (0.40 KM) TO A GATE ON THE RIGHT
LH1383'(JUST PAST THE BEACON), TURN RIGHT, PASS THROUGH GATE AND GO NORTH
LH1383'ACROSS THE APRON FOR 0.1 MI (0.2 KM) TO A TAXIWAY LEADING TO THE
LH1383'NORTH, GO NORTH THEN NORTHWEST FOLLOWING THE TAXIWAY FOR 0.25 MI (0.40
LH1383'KM) TO THE INTERSECTION WITH A NE/SW PARALLEL TAXIWAY, TURN RIGHT AND
LH1383'GO NORTHEAST ON THE PARALLEL TAXIWAY (B) FOR 0.05 MI (0.08 KM) TO THE
LH1383'STATION ON THE LEFT ABOUT 4 FT (1.2 M) HIGHER THAN THE TAXIWAY.  THE
LH1383'STATION IS 393.8 FT (120.0 M) NORTHWEST OF A WINDSOCK, 404 FT (123.1
LH1383'M) SOUTHWEST OF THE SOUTHWEST EDGE OF RUNWAY 14/32, 232.9 FT (71.0 M)
LH1383'NORTHEAST OF THE NORTHEAST EDGE OF A TAXIWAY, 99.4 FT (30.3 M)
LH1383'NORTHWEST OF THE NORTHWEST EDGE OF THE TAXIWAY AND 1.0 FT (0.3 M)
LH1383'SOUTHEAST OF A WITNESS POST.  STATION IS RECESSED 4 CM BELOW THE
LH1383'GROUND.  NOTE--THIS STATION WAS USED AS AN AREA NAVIGATION APPROACH
LH1383'PRIMARY AIRPORT CONTROL STATION.
LH1383
LH1383                          STATION RECOVERY (1997)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (AJL)
LH1383'RECOVERED AS DESCRIBED.
LH1383
LH1383                          STATION RECOVERY (2000)
LH1383
LH1383'RECOVERY NOTE BY NEBRASKA ROADS DEPARTMENT 2000 (JAO)
LH1383'RECOVERED AS DESCRIBED.
LH1383
LH1383                          STATION RECOVERY (2002)
LH1383
LH1383'RECOVERY NOTE BY NEBRASKA ROADS DEPARTMENT 2002
LH1383'RECOVERED IN GOOD CONDITION.
LH1383
LH1383                          STATION RECOVERY (2004)
LH1383
LH1383'RECOVERY NOTE BY NATIONAL DEPARTMENT OF AERONAUTICS 2004 (BJS)
LH1383'OWNERSHIP - CITY OF HASTINGS, 220 N. HASTINGS AVE., HASTINGS, NE
LH1383'68901. CITY ENGINEER IS DAVID WACKER, (402) 461-2330
LH1383
LH1383                          STATION RECOVERY (2006)
LH1383
LH1383'RECOVERY NOTE BY US GEOLOGICAL SURVEY 2006 (BKW)
LH1383'RECOVERED IN GOOD CONDITION.
LH1383
LH1383                          STATION RECOVERY (2010)
LH1383
LH1383'RECOVERY NOTE BY JEO CONSULTING GROUP INC 2010 (JG)
LH1383'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
```

Elapsed Time = 00:00:00

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE =   ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = MARCH 21, 2011
 LH1476 ***********************************************************************
 LH1476  DESIGNATION -  Z 438
 LH1476  PID         -  LH1476
 LH1476  STATE/COUNTY-  NE/ADAMS
 LH1476  USGS QUAD   -  HASTINGS WEST (1983)
 LH1476
 LH1476                         *CURRENT SURVEY CONTROL
 LH1476  ___________________________________________________________________
 LH1476* NAD 83(1986)-  40 35 45.     (N)    098 24 41.     (W)    SCALED
 LH1476* NAVD 88     -       587.570  (meters)    1927.72   (feet)  ADJUSTED
 LH1476  ___________________________________________________________________
 LH1476  GEOID HEIGHT-        -25.25  (meters)                      GEOID09
 LH1476  DYNAMIC HT  -        587.241 (meters)    1926.64   (feet)  COMP
 LH1476  MODELED GRAV-    980,046.1   (mgal)                        NAVD 88
 LH1476
 LH1476  VERT ORDER  -  FIRST     CLASS II
 LH1476
 LH1476.The horizontal coordinates were scaled from a topographic map and have
 LH1476.an estimated accuracy of +/- 6 seconds.
 LH1476
 LH1476.The orthometric height was determined by differential leveling and
 LH1476.adjusted in May 1993.
 LH1476
 LH1476.The geoid height was determined by GEOID09.
 LH1476
 LH1476.The dynamic height is computed by dividing the NAVD 88
 LH1476.geopotential number by the normal gravity value computed on the
 LH1476.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 LH1476.degrees latitude (g = 980.6199 gals.).
 LH1476
 LH1476.The modeled gravity was interpolated from observed gravity values.
 LH1476
 LH1476;                    North         East     Units  Estimated Accuracy
 LH1476;SPC NE       -    85,900.      634,440.      MT  (+/- 180 meters Scaled)
 LH1476
 LH1476                          SUPERSEDED SURVEY CONTROL
 LH1476
 LH1476.No superseded survey control is available for this station.
 LH1476
 LH1476_U.S. NATIONAL GRID SPATIAL ADDRESS: 14TNK498940(NAD 83)
 LH1476_MARKER: I = METAL ROD
 LH1476_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
 LH1476_SP_SET: STAINLESS STEEL ROD
 LH1476_STAMPING: Z 438 1991
 LH1476_MARK LOGO: NGS
 LH1476_PROJECTION: FLUSH
 LH1476_MAGNETIC: I = MARKER IS A STEEL ROD
```

```
LH1476_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
LH1476_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
LH1476+SATELLITE: SATELLITE OBSERVATIONS - 1991
LH1476_ROD/PIPE-DEPTH: 14.3 meters
LH1476
LH1476  HISTORY     - Date     Condition        Report By
LH1476  HISTORY     - 1991     MONUMENTED       NGS
LH1476  HISTORY     - 20100427 GOOD             JEOCON
LH1476
LH1476                          STATION DESCRIPTION
LH1476
LH1476'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991
LH1476'IN HASTINGS, AT THE INTERSECTION OF CRANE AVENUE AND HOME STREET,
LH1476'30.6 M (100.4 FT) WEST OF THE AVENUE CENTER, 6.8 M (22.3 FT) NORTH OF
LH1476'AND LEVEL WITH THE STREET CENTER, 2.2 M (7.2 FT) SOUTH OF A
LH1476'CHAIN-LINK FENCE AND WITNESS POST, AND 0.7 WEST OF A UTILITY POLE.
LH1476'NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.
LH1476
LH1476                          STATION RECOVERY (2010)
LH1476
LH1476'RECOVERY NOTE BY JEO CONSULTING GROUP INC 2010 (JG)
LH1476'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:00
```

APPENDIX M

INVESTIGATION DERIVED WASTE MANIFESTS

HASTINGS
SOLID WASTE DEPT.

May 17, 2010

HydroGeoLogic Inc
ATTN: Jeff Gadt
6340 Glenwood
Suite 200, Bldg #7
Overland Park, KS 66202

RE: Garvey Elevator Site, Drill Cuttings

Dear Mr. Gadt:

Thank you for submitting the analytical results for the above referenced waste stream. Following a review of the data, the Solid Waste Department approves your request to dispose of approximately 6 – 8 cubic yards of soil containing drill cuttings from the above referenced site. The classification of this waste stream is "Special Waste" with a current fee of $87.00 per ton with a minimum charge of $87.00.

Please find enclosed a load manifest form to be completed prior to delivery. If you have any questions, please feel free to call me at (402) 461-2308.

Sincerely,

Jack E. Newlun

Jack E. Newlun
Solid Waste Superintendent/Environmental Officer
City of Hastings

Cc: Woodward's Disposal
Scalehouse
Landfill Operators

JEN:jj

HASTINGS
SOLID WASTE DEPT.

SPECIAL WASTE / INDUSTRIAL WASTE / ASBESTOS LOAD MANIFEST

• SOLID WASTE FACILITY OWNER/OPERATOR

Name: City of Hastings Solid Waste Facility
Address: 725 South Southern Hills Drive
Phone: (402) 463-0705 or (402) 461-2308
www.cityofhastings.org/solid waste

Date Waste is Received: ____/____/____ Vol of Special Waste Received: __________ **TONS**

Signature of Landfill Scale Clerk: ____________________

• GENERATOR OF WASTE

Name: EPA Region 7, Brian Zurbuchen
Address: 501 N 5th Street, Kansas City KS
Phone: 913-551-7101 Contact Person: Brian Zurbuchen
Description of Special Waste: drilling cuttings from
offsite monitoring wells for Garvey Elevator site

Date Waste Was Generated: 4/16/10 - 5-1-10

Volume of Special Waste Generated: ≈8 **TONS**

Signature of Waste Generator: [signature] for Brian Zurbuchen

---

Volume of Special Waste Received: ________ **TONS**
Name: ________________ Address ________________

Phone: ____________ Contact Person: ________________

Date of Transport: ____/____/____ Volume of Special WasteTransported: ______ **TONS**

Signature of Transporter: ____________________

HASTINGS
SOLID WASTE DEPT.

May 25, 2010

HydroGeoLogic Inc
ATTN: Jeff Gadt
6340 Glenwood
Suite 200, Bldg #7
Overland Park, KS 66202

RE: Garvey Elevator Site, Drill Cuttings, RollOff #3

Dear Mr. Gadt:

Thank you for submitting the analytical results for the above referenced waste stream. Following a review of the data, the Solid Waste Department approves your request to dispose of approximately 9 – 11 cubic yards of drill cutting waste from the above referenced site. The classification of this waste stream is "Special Waste" with a current fee of $87.00 per ton with a minimum charge of $87.00.

Please find enclosed a load manifest form to be completed prior to delivery. If you have any questions, please feel free to call me at (402) 461-2308.

Sincerely,

Jack E. Newlun

Jack E. Newlun
Solid Waste Superintendent/Environmental Officer
City of Hastings

Cc: Woodward's Disposal
Scalehouse
Landfill Operators

JEN:jj

HASTINGS
SOLID WASTE DEPT.

SPECIAL WASTE / INDUSTRIAL WASTE / ASBESTOS LOAD MANIFEST

- **SOLID WASTE FACILITY OWNER/OPERATOR**

Name: City of Hastings Solid Waste Facility
Address: 725 South Southern Hills Drive
Phone: (402) 463-0705 or (402) 461-2308
www.cityofhastings.org/solid waste

Date Waste is Received: ___/___/___ Vol of Special Waste Received:________ **TONS**

Signature of Landfill Scale Clerk:____________________

- **GENERATOR OF WASTE**

Name: EPA REGION 7, BRIAN ZURBUCHEN

Address: 501 N. 5TH STREET, KANSAS CITY, KS

Phone: 913-551-7101 Contact Person: BRIAN ZURBUCHEN

Description of Special Waste: DRILL CUTTINGS FROM OFF-SITE MONITORING WELLS FOR GARVEY ELEVATOR

Date Waste Was Generated: 04/16/10 - 05/04/10

Volume of Special Waste Generated: ~11 **TONS**

Signature of Waste Generator: [signature] FOR BRIAN ZURBUCHEN

Volume of Special Waste Received:______ **TONS**
Name:________________ Address________________

Phone:____________ Contact Person:________________

Date of Transport:___/___/___ Volume of Special WasteTransported:______ **TONS**

Signature of Transporter:____________________

HASTINGS
SOLID WASTE DEPT.

June 4, 2010

HydroGeoLogic Inc
ATTN: Jeff Gadt
6340 Glenwood
Suite 200, Bldg #7
Overland Park, KS 66202

RE: Garvey Elevator Site, Drill Cuttings, RollOff #5 – on behalf of EPA

Dear Mr. Gadt:

Thank you for submitting the analytical results for the above referenced waste stream. Following a review of the data, the Solid Waste Department approves your request to dispose of approximately 13 tons (9 – 11 cubic yards) of drill cutting waste from the above referenced site. The classification of this waste stream is "Special Waste" with a current fee of $87.00 per ton with a minimum charge of $87.00.

Please find enclosed a load manifest form to be completed prior to delivery. If you have any questions, please feel free to call me at (402) 461-2308.

Sincerely,

Jack E. Newlun

Jack E. Newlun
Solid Waste Superintendent/Environmental Officer
City of Hastings

Cc: Woodward's Disposal
Scalehouse
Landfill Operators

JEN:jj

HASTINGS
SOLID WASTE DEPT.

SPECIAL WASTE / INDUSTRIAL WASTE / ASBESTOS LOAD MANIFEST

•• SOLID WASTE FACILITY OWNER/OPERATOR

Name: City of Hastings Solid Waste Facility
Address: 725 South Southern Hills Drive
Phone: (402) 463-0705 or (402) 461-2308
www.cityofhastings.org/solid waste

Date Waste is Received:___/___/___ Vol of Special Waste Received:__________**TONS**

Signature of Landfill Scale Clerk:______________________________

•• GENERATOR OF WASTE

Name: EPA Region 7, Brian Zurbuchen

Address: 501 N. 5th Street, KANSAS CITY, KS

Phone: 913-551-7101 Contact Person: B

Description of Special Waste: Drill cuttings from off-site Monitoring Wells for Garvey Elevator Site. (Rolloff #5)

Date Waste Was Generated: 04/16/10 - 5/17/10

Volume of Special Waste Generated: ~13 **TONS**

Signature of Waste Generator: [signature] for Brian Zurbuchen

Volume of Special Waste Received:__________**TONS**
Name:______________________ Address______________________

Phone:__________________ Contact Person:______________________

Date of Transport:___/___/___ Volume of Special Waste Transported:______**TONS**

Signature of Transporter:______________________________

HASTINGS
SOLID WASTE DEPT.

June 9, 2010

HydroGeoLogic Inc
ATTN: Jeff Gadt
6340 Glenwood
Suite 200, Bldg #7
Overland Park, KS 66202

RE: Garvey Elevator Site, Drill Cuttings, RollOff #1 & #4 – on behalf of EPA

Dear Mr. Gadt:

Thank you for submitting the analytical results for the above referenced waste stream. Following a review of the data, the Solid Waste Department approves your request to dispose of approximately 16 tons (12 – 14 cubic yards) of drill cutting waste from the above referenced site identified as RollOff #1 & #4. The classification of this waste stream is "Special Waste" with a current fee of $87.00 per ton with a minimum charge of $87.00.

Please find enclosed a load manifest form to be completed prior to delivery. If you have any questions, please feel free to call me at (402) 461-2308.

Sincerely,

Jack E. Newlun
Solid Waste Superintendent/Environmental Officer
City of Hastings

Cc: Woodward's Disposal
Scalehouse
Landfill Operators

JEN:jj

Rolloff #1
12-yd³ rolloff

HASTINGS
SOLID WASTE DEPT.

SPECIAL WASTE / INDUSTRIAL WASTE / ASBESTOS LOAD MANIFEST

- **SOLID WASTE FACILITY OWNER/OPERATOR**

Name: City of Hastings Solid Waste Facility
Address: 725 South Southern Hills Drive
Phone: (402) 463-0705 or (402) 461-2308
www.cityofhastings.org/solid waste

Date Waste Is Received: ___/___/___ Vol of Special Waste Received: ________ **TONS**

Signature of Landfill Scale Clerk: ________________

- **GENERATOR OF WASTE**

Name: EPA Region 7

Address: 501 N. 5th Street, Kansas City, KS

Phone: 913-551-7101 Contact Person: Brian Zurbuchen

Description of Special Waste: Drill Cuttings from off-site monitoring well installation at Garvey Elevator Site (Rolloff #1, on west)

Date Waste Was Generated: 4/6/10 – 5/28/10

Volume of Special Waste Generated: ~8 **TONS**

Signature of Waste Generator: [signature] for Brian Zurbuchen

Volume of Special Waste Received: ________ **TONS**
Name: ________________ Address ________________

Phone: ________________ Contact Person: ________________

Date of Transport: ___/___/___ Volume of Special WasteTransported: ______ **TONS**

Signature of Transporter: ________________

Rolloff #4
12-yrd³ rolloff

HASTINGS
SOLID WASTE DEPT.

SPECIAL WASTE / INDUSTRIAL WASTE / ASBESTOS LOAD MANIFEST

- **SOLID WASTE FACILITY OWNER/OPERATOR**

Name: City of Hastings Solid Waste Facility
Address: 725 South Southern Hills Drive
Phone: (402) 463-0705 or (402) 461-2308
www.cityofhastings.org/solid waste

Date Waste Is Received: ____/____/____ Vol of Special Waste Received:__________**TONS**

Signature of Landfill Scale Clerk:______________________________

- **GENERATOR OF WASTE**

Name: EPA Region 7
Address: 501 N. 5th Street, Kansas City, KS
Phone: 913-551-7101 Contact Person: Brian Zurbuchen
Description of Special Waste: Drill Cuttings from off-site monitoring well installation at Garvey Elevator Site (Rolloff #; on east

Date Waste Was Generated: 4/16/10 – 5/28/10
Volume of Special Waste Generated: ~8 **TONS**
Signature of Waste Generator: [signature] for Brian Zurbuchen

Volume of Special Waste Received:__________**TONS**
Name:______________________________Address______________________________

Phone:____________________Contact Person:______________________________

Date of Transport:____/____/____ Volume of Special WasteTransported:______**TONS**

Signature of Transporter:______________________________

HASTINGS
SOLID WASTE DEPT.

June 16, 2010

HydroGeoLogic Inc
ATTN: Jeff Gadt
6340 Glenwood
Suite 200, Bldg #7
Overland Park, KS 66202

RE: Garvey Elevator Site, Drill Cuttings, RollOff #6 – on behalf of EPA

Dear Mr. Gadt:

Thank you for submitting the analytical results for the above referenced waste stream. Following a review of the data, the Solid Waste Department approves your request to dispose of approximately 13 tons (9 – 11 cubic yards) of drill cutting waste from the above referenced site. The classification of this waste stream is "Special Waste" with a current fee of $87.00 per ton with a minimum charge of $87.00.

Please find enclosed a load manifest form to be completed prior to delivery. If you have any questions, please feel free to call me at (402) 461-2308.

Sincerely,

Jack E. Newlun
Solid Waste Superintendent/Environmental Officer
City of Hastings

Cc: Woodward's Disposal
Scalehouse
Landfill Operators

JEN:jj

220 N. Hastings Avenue • P.O. Box 1085 • Hastings, Nebraska 68902-1085 • 402-461-2308 • Fax 402-463-0702
jnewlun@cityofhastings.org • www.cityofhastings.org
Landfill • 725 South Southern Hills Dr. • 402-463-0705

HASTINGS
SOLID WASTE DEPT.

SPECIAL WASTE / INDUSTRIAL WASTE / ASBESTOS LOAD MANIFEST

• SOLID WASTE FACILITY OWNER/OPERATOR

Name: City of Hastings Solid Waste Facility
Address: 725 South Southern Hills Drive
Phone: (402) 463-0705 or (402) 461-2308
www.cityofhastings.org/solid waste

Date Waste Is Received: ___/___/___ Vol of Special Waste Received:__________**TONS**

Signature of Landfill Scale Clerk: ______________________________

• GENERATOR OF WASTE

Name: EPA Region 7, Brian Zurbuchen

Address: 501 North 5th Street, Kansas City, Kansas

Phone: 913-551-7101 Contact Person: Brian Zurbuchen

Description of Special Waste: Drill cuttings from offsite monitoring well Installation for Garvey Elevator Site. (Rolloff #6)

Date Waste Was Generated: 4/16/10 – 5/28/10

Volume of Special Waste Generated: ≈ 13 **TONS**

Signature of Waste Generator: [signature] for Brian Zurbuchen

Volume of Special Waste Received:__________**TONS**
Name:______________________ Address______________________

Phone:______________ Contact Person:______________________

Date of Transport: ___/___/___ Volume of Special WasteTransported:______**TONS**

Signature of Transporter: ______________________________

APPENDIX N

AREAL SOILS MAPS AND DESCRIPTIONS

United States Department of Agriculture

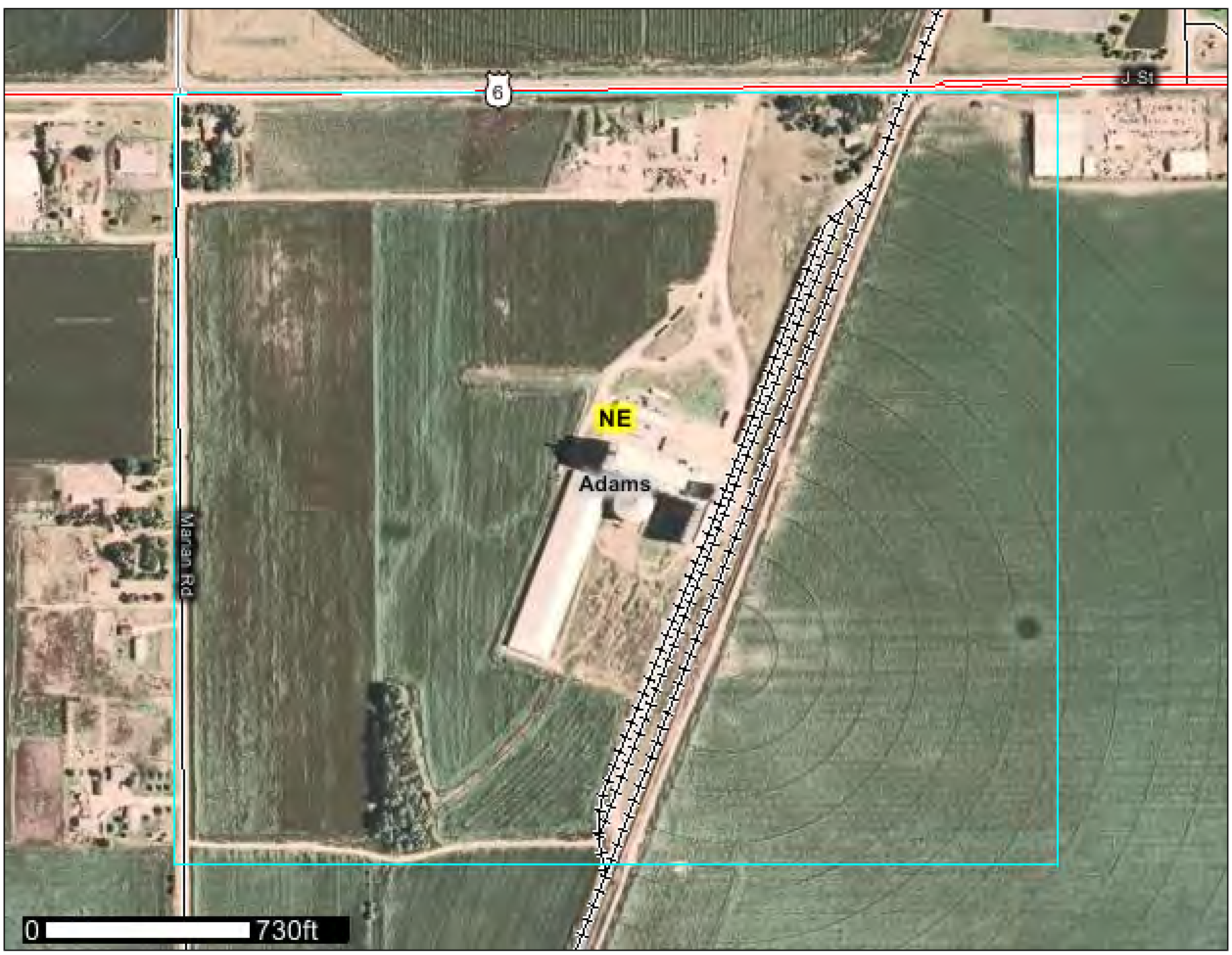
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Adams County, Nebraska



February 19, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Garvey Elevator Site Soils)

Map Scale: 1:7,240 if printed on A size (8.5" x 11") sheet.

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:7,240 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Adams County, Nebraska
Survey Area Data: Version 8, Oct 29, 2009

Date(s) aerial images were photographed: 7/23/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Garvey Elevator Site Soils)

Adams County, Nebraska (NE001)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
3864	Hastings silt loam, 0 to 1 percent slopes	118.8	61.2%
3880	Holder silt loam, 1 to 3 percent slopes	61.1	31.5%
3883	Holder silt loam, 3 to 7 percent slopes, eroded	14.2	7.3%
Totals for Area of Interest		**194.1**	**100.0%**

Map Unit Descriptions (Garvey Elevator Site Soils)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Adams County, Nebraska

3864—Hastings silt loam, 0 to 1 percent slopes

Map Unit Setting
Elevation: 1,500 to 2,500 feet
Mean annual precipitation: 25 to 29 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 150 to 170 days

Map Unit Composition
Hastings and similar soils: 100 percent

Description of Hastings

Setting
Landform: Interfluves
Landform position (three-dimensional): Flat
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 11.1 inches)

Interpretive groups
Land capability classification (irrigated): 1
Land capability (nonirrigated): 1
Ecological site: Loamy Upland (R075XY058NE)

Typical profile
0 to 11 inches: Silt loam
11 to 41 inches: Silty clay loam
41 to 80 inches: Silt loam

3880—Holder silt loam, 1 to 3 percent slopes

Map Unit Setting
Mean annual precipitation: 26 to 28 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 150 to 170 days

Map Unit Composition

Holder and similar soils: 100 percent

Description of Holder

Setting

Landform: Ridges on hillslopes
Landform position (three-dimensional): Flat
Down-slope shape: Convex, concave
Across-slope shape: Linear
Parent material: Loess

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e
Ecological site: Loamy Upland (R075XY058NE)

Typical profile

0 to 7 inches: Silt loam
7 to 30 inches: Silty clay loam
30 to 80 inches: Silt loam

3883—Holder silt loam, 3 to 7 percent slopes, eroded

Map Unit Setting

Mean annual precipitation: 26 to 28 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 150 to 170 days

Map Unit Composition

Holder and similar soils: 100 percent

Description of Holder

Setting

Landform: Hillslopes
Down-slope shape: Convex, concave
Across-slope shape: Linear
Parent material: Loess

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability (nonirrigated): 3e
Ecological site: Loamy Upland (R075XY058NE)

Typical profile

0 to 7 inches: Silt loam
7 to 20 inches: Silty clay loam
20 to 80 inches: Silt loam

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APPENDIX O

WATER LEVEL DATA

Waterloo Monitoring Well Water Level Data
August 2008
Garvey Elevator Site
Hastings, Nebraska

Well ID	Date of Installation	R_0 Transducer Pressure Reading Before Installation (Dg)	T_0 Temperature Before Installation (°C)	S_0 Barometric Pressure Before Installation (in Hg)[4]	Sampling Measurement Date	R_1 Transducer Pressure Reading Before Sampling (Dg)[1]	T_1 Temperature Before Sampling (°C)	S_1 Barometric Pressure Before Sampling (mbar)[3]
MW-19A	9/19/2007	8903.3	22.4	30.11	8/12/2008			
MW-19C	9/19/2007	8864.6	22.4	30.11	8/12/2008			
MW-20A	9/18/2007	8445.7	21.4	29.86	8/13/2008	8250.7	12.2	29.89
MW-20C	9/18/2007	8744.3	21.1	29.86	8/13/2008	7674.8	12.2	29.89
MW-20D	9/18/2007	8903.0	22.6	29.86	8/13/2008	6871.7	12.9	29.89
MW-20E	9/18/2007	8998.0	21.3	29.86	8/13/2008	7280.8	12.6	29.89
MW-30A	9/22/2007	8815.1	22.3	30.13	8/14/2008			
MW-30C	9/22/2007	8798.8	22.3	30.13	8/14/2008	7616.7	12.4	29.97
MW-30D	9/22/2007	8830.0	22.4	30.13	8/14/2008	6691.8	12.9	29.97
MW-30E	9/22/2007	8972.5	21.4	30.13	8/14/2008	7284.5	12.8	29.97
MW-31A	9/21/2007	8802.4	22.3	29.91	8/14/2008	8512.8	12.2	29.97
MW-31C	9/21/2007	8727.3	22.2	29.91	8/14/2008	7681.4	12.2	29.97

Well ID	F Barometric Conversion factor (inches Hg to psi)	K Thermal Factor	G Calibration Linear Gage Factor (Dg to psi)	Standard Factor (psi to ft water)	P_c Transducer Pressure corrected	Column of Water Above diaphram (ft)	D^D Depth to Transducer Diaphram (ft below TOC)[2]	D^w Depth to Water (ft btoc - 4" pvc)
MW-19A	0.4912	-0.01592	0.01567	2.30814			132.59497	
MW-19C	0.4912	-0.01648	0.01626	2.30814			159.585232	
MW-20A	0.4912	-0.00921	0.01544	2.30814	3.081077626	7.111558511	130.8349097	123.72
MW-20C	0.4912	-0.01646	0.01621	2.30814	17.468353	40.31940429	158.695707	118.38
MW-20D	0.4912	-0.01371	0.01495	2.30814	30.4856185	70.36507548	188.6764688	118.31
MW-20E	0.4912	-0.00215	0.02725	2.30814	46.79704525	108.014132	226.6744659	118.66
MW-30A	0.4912	-0.00627	0.01654	2.30814		0	133.2750627	
MW-30C	0.4912	-0.01349	0.01472	2.30814	17.612655	40.65247351	160.2961415	119.64
MW-30D	0.4912	-0.00557	0.01433	2.30814	30.771913	71.02588327	190.6264514	119.60
MW-30E	0.4912	0.00358	0.02779	2.30814	46.957324	108.3840778	228.4512433	120.07
MW-31A	0.4912	-0.01104	0.01575	2.30814	4.643232	10.71722951	131.7892395	121.07
MW-31C	0.4912	-0.01909	0.01555	2.30814	16.425173	37.91159881	158.7675277	120.86

[2] The transducer diaphram is 6.25 inches (0.5208 ft) above the sample port

[3] Barometric pressure recorded for the day of measurement at 1153 hrs (wunderground.com)

[4] Barometric readings at installation by date are as follows: 9/19/07 at 1124 hrs; 9/19/07 at 1553 hrs; 9/21/07 at 1453 hrs; and 9/22/07 at 0953 hrs

[1]Dg reading is recorded prior to sample collection from position reading B with the Geokon Vibrating Wire Readout Box (handheld unit).

Dg = Digits

ft = Feet

psi = Pounds per square inch

$P_c = (G \times (R_0 - R_1)) + (K \times (T_1 - T_0)) - (F \times (S_1 - S_0))$

$Dw = P_c \times (2.31\ \text{ft/psi})$

33.863 x inches Hg = mbar

	Hz	Dg
MW-20A	2872.4	8250.7
MW-20D	2621.4	6871.7
MW-20E	2698.3	7280.8

conversion from Hz to Dg is square of Hz multiplied by 0.001 (from Geokon 404 manual example on page 2

Waterloo Monitoring Well Water Level Data
April 2009
Garvey Elevator Site
Hastings, Nebraska

Well ID	Date of Installation	R_0 Transducer Pressure Reading Before Installation (Dg)	T_0 Temperature Before Installation (°C)	S_0 Barometric Pressure Before Installation (in Hg)[4]	Sampling Measurement Date	R_1 Transducer Pressure Reading Before Sampling (Dg)[1]	T_1 Temperature Before Sampling (°C)[1]	S_1 Barometric Pressure Before Sampling (mbar)[3]
MW-19A	9/19/2007	8903.3	22.4	30.11	4/22/2009	8477.6	12.2	29.82
MW-19C	9/19/2007	8864.6	22.4	30.11	4/22/2009	7749.2	12.5	29.82
MW-20A	9/18/2007	8445.7	21.4	29.86	4/23/2009	8059	12.3	29.67
MW-20C	9/18/2007	8744.3	21.1	29.86	4/23/2009	7640.9	12.2	29.67
MW-20D	9/18/2007	8903.0	22.6	29.86	4/23/2009	6829	12.8	29.67
MW-20E	9/18/2007	8998.0	21.3	29.86	4/23/2009	7260.3	12.6	29.67
MW-30A	9/22/2007	8815.1	22.3	30.13	4/23/2009	8435.7	12.5	29.67
MW-30C	9/22/2007	8798.8	22.3	30.13	4/23/2009	7569.6	12.4	29.67
MW-30D	9/22/2007	8830.0	22.4	30.13	4/23/2009	6649.7	12.8	29.67
MW-30E	9/22/2007	8972.5	21.4	30.13	4/23/2009	7265	12.8	29.67
MW-31A	9/21/2007	8802.4	22.3	29.91	4/23/2009	8452.3	12.2	29.67
MW-31C	9/21/2007	8727.3	22.2	29.91	4/23/2009	7624.4	12.5	29.67

Well ID	F Barometric Conversion factor (inches Hg to psi)	K Thermal Factor	G Calibration Linear Gage Factor (Dg to psi)	Standard Factor (psi to ft water)	P_c Transducer Pressure corrected	Column of Water Above diaphram (ft)	D^D Depth to Transducer Diaphram (ft below TOC)[2]	D^w Depth to Water (ft btoc - 4" pvc)
MW-19A	0.4912	-0.01592	0.01567	2.30814	6.975551	16.10054829	132.59497	116.49
MW-19C	0.4912	-0.01648	0.01626	2.30814	18.442004	42.56672711	159.585232	117.02
MW-20A	0.4912	-0.00921	0.01544	2.30814	6.147787	14.18995309	130.8349097	116.64
MW-20C	0.4912	-0.01646	0.01621	2.30814	18.125936	41.83719792	158.695707	116.86
MW-20D	0.4912	-0.01371	0.01495	2.30814	31.233986	72.09241245	188.6764688	116.58
MW-20E	0.4912	-0.00215	0.02725	2.30814	47.464358	109.5543833	226.6744659	117.12
MW-30A	0.4912	-0.00627	0.01654	2.30814	6.562674	15.14757037	133.2750627	118.13
MW-30C	0.4912	-0.01349	0.01472	2.30814	18.453327	42.59286218	160.2961415	117.70
MW-30D	0.4912	-0.00557	0.01433	2.30814	31.523123	72.75978112	190.6264514	117.87
MW-30E	0.4912	0.00358	0.02779	2.30814	47.646589	109.9749979	228.4512433	118.48
MW-31A	0.4912	-0.01104	0.01575	2.30814	5.743467	13.25672592	131.7892395	118.53
MW-31C	0.4912	-0.01909	0.01555	2.30814	17.453156	40.28432749	158.7675277	118.48

[1] Temperature values were not recorded during the April 2009 event; the June 2009 temperatures are displayed and used for approximate temperature corrections

[2] The transducer diaphram is 6.25 inches (0.5208 ft) above the sample port

[3] Barometric pressure recorded for the day of measurement (wunderground.com)

[4] Barometric readings at installation by date are as follows: 9/19/07 at 1124 hrs; 9/19/07 at 1553 hrs; 9/21/07 at 1453 hrs; and 9/22/07 at 0953 hrs

[1]Dg reading is recorded prior to sample collection from position reading B with the Geokon Vibrating Wire Readout Box (handheld unit).

Dg = Digits

ft = Feet

psi = Pounds per square inch

$P_c = (G \times (R_0 - R_1)) + (K \times (T_1 - T_0)) - (F \times (S_1 - S_0))$

$Dw = P_c \times (2.31 \text{ ft/psi})$

33.863 x inches Hg = mbar

Waterloo Monitoring Well Water Level Data
June 2009
Garvey Elevator Site
Hastings, Nebraska

Well ID	Date of Installation	R_0 Transducer Pressure Reading Before Installation (Dg)	T_0 Temperature Before Installation (°C)	S_0 Barometric Pressure Before Installation (in Hg)[4]	R_1 Transducer Pressure Reading Before Sampling (Dg)[1]	T_1 Temperature Before Sampling (°C)	S_1 Barometric Pressure Before Sampling (mbar)[3]	F Barometric Converstion factor (inches Hg to psi)
MW-19A	9/19/2007	8903.3	22.4	30.11	8463.1	12.2	29.89	0.4912
MW-19C	9/19/2007	8864.6	22.4	30.11	7738.4	12.5	29.89	0.4912
MW-20A	9/18/2007	8445.7	21.4	29.86	8055.3	12.3	29.89	0.4912
MW-20C	9/18/2007	8744.3	21.1	29.86	7633.1	12.2	29.89	0.4912
MW-20D	9/18/2007	8903.0	22.6	29.86	6824.3	12.8	29.89	0.4912
MW-20E	9/18/2007	8998.0	21.3	29.86	7255.6	12.6	29.89	0.4912
MW-30A	9/22/2007	8815.1	22.3	30.13	8425.0	12.5	29.89	0.4912
MW-30C	9/22/2007	8798.8	22.3	30.13	7560.2	12.4	29.89	0.4912
MW-30D	9/22/2007	8830.0	22.4	30.13	6637.7	12.8	29.89	0.4912
MW-30E	9/22/2007	8972.5	21.4	30.13	7258.1	12.8	29.89	0.4912
MW-31A	9/21/2007	8802.4	22.3	29.91	8439.0	12.2	29.89	0.4912
MW-31C	9/21/2007	8727.3	22.2	29.91	7617.4	12.5	29.89	0.4912

Well ID	K Thermal Factor	G Calibration Linear Gage Factor (Dg to psi)	Standard Factor (psi to ft water)	P_c Transducer Pressure corrected	Column of Water Above diaphram (ft)	D^D Depth to Transducer Diaphram (ft below TOC)[2]	D^w Depth to Water (ft btoc - 4" pvc)
MW-19A	-0.01592	0.01567	2.30814	7.168382	16.54562923	132.59497	116.05
MW-19C	-0.01648	0.01626	2.30814	18.583228	42.89269188	159.585232	116.69
MW-20A	-0.00921	0.01544	2.30814	6.096851	14.07238567	130.8349097	116.76
MW-20C	-0.01646	0.01621	2.30814	18.14431	41.87960768	158.695707	116.82
MW-20D	-0.01371	0.01495	2.30814	31.196187	72.00516706	188.6764688	116.67
MW-20E	-0.00215	0.02725	2.30814	47.484369	109.6005715	226.6744659	117.07
MW-30A	-0.00627	0.01654	2.30814	6.631588	15.30663353	133.2750627	117.97
MW-30C	-0.01349	0.01472	2.30814	18.483631	42.66280806	160.2961415	117.63
MW-30D	-0.00557	0.01433	2.30814	31.587019	72.90726203	190.6264514	117.72
MW-30E	0.00358	0.02779	2.30814	47.730276	110.1681592	228.4512433	118.28
MW-31A	-0.01104	0.01575	2.30814	5.844878	13.49079671	131.7892395	118.30
MW-31C	-0.01909	0.01555	2.30814	17.453942	40.28614169	158.7675277	118.48

Readings (Pressure and temperature) for June 2009 sampling event collected on June 10, 2009

[2] The transducer diaphram is 6.25 inches (0.5208 ft) above the sample port

[3] Barometric pressure recorded for the day of measurement at 1053 hrs reading was 29.89 in Hg (wunderground.com)

[4] Barometric readings at installation by date are as follows: 9/19/07 at 1124 hrs; 9/19/07 at 1553 hrs; 9/21/07 at 1453 hrs; and 9/22/07 at 0953 hrs

[1]Dg reading is recorded prior to sample collection from position reading B with the Geokon Vibrating Wire Readout Box (handheld unit).

Dg = Digits

ft = Feet

psi = Pounds per square inch

$P_c = (G \times (R_0 - R_1)) + (K \times (T_1 - T_0)) - (F \times (S_1 - S_0))$

$Dw = P_c \times (2.31 \text{ ft/psi})$

33.863 x inches Hg = mbar

Waterloo Monitoring Well Water Level Data
May 2010
Garvey Elevator Site
Hastings, Nebraska

Well ID	Date of Installation	R_0 Transducer Pressure Reading Before Installation (Dg)	T_0 Temperature Before Installation (°C)	S_0 Barometric Pressure Before Installation (in Hg)[4]	Sampling Measurement Date	R_1 Transducer Pressure Reading Before Sampling (Dg)[1]	T_1 Temperature Before Sampling (°C)	S_1 Barometric Pressure Before Sampling (mbar)[3]
MW-19A	9/19/2007	8903.3	22.4	30.11	5/13/2010	8454.1	12.2	30.04
MW-20A	9/18/2007	8445.7	21.4	29.86	5/13/2010	8044.4	12.3	30.04
MW-20C	9/18/2007	8744.3	21.1	29.86	5/13/2010	7637.4	12.2	30.04
MW-30A	9/22/2007	8815.1	22.3	30.13	5/13/2010	8399.99	12.4	30.04
MW-30C	9/22/2007	8798.8	22.3	30.13	5/13/2010	7575.6	12.4	30.04
MW-30D	9/22/2007	8830.0	22.4	30.13	5/13/2010	6644.2	12.6	30.04
MW-30E	9/22/2007	8972.5	21.4	30.13	5/13/2010	7261.3	12.7	30.04
MW-31A	9/21/2007	8802.4	22.3	29.91	5/13/2010	8468.0	12.1	30.04

Well ID	F Barometric Converstion factor (inches Hg to psi)	K Thermal Factor	G Calibration Linear Gage Factor (Dg to psi)	Standard Factor (psi to ft water)	P_c Transducer Pressure corrected	Column of Water Above diaphram (ft)	D^D Depth to Transducer Diaphram (ft below TOC)[2]	D^w Depth to Water (ft btoc - 4" pvc)
MW-19A	0.4912	-0.01592	0.01567	2.30814	7.235732	16.70108246	132.59497	115.89
MW-20A	0.4912	-0.00921	0.01544	2.30814	6.191467	14.29077264	130.8349097	116.54
MW-20C	0.4912	-0.01646	0.01621	2.30814	18.000927	41.54865965	158.695707	117.15
MW-30A	0.4912	-0.00627	0.01654	2.30814	6.9722004	16.09281463	133.2750627	117.18
MW-30C	0.4912	-0.01349	0.01472	2.30814	18.183263	41.96951666	160.2961415	118.33
MW-30D	0.4912	-0.00557	0.01433	2.30814	31.421308	72.52477785	190.6264514	118.10
MW-30E	0.4912	0.00358	0.02779	2.30814	47.56731	109.7920109	228.4512433	118.66
MW-31A	0.4912	-0.01104	0.01575	2.30814	5.315552	12.26903819	131.7892395	119.52

[2] The transducer diaphram is 6.25 inches (0.5208 ft) above the sample port

[3] Barometric pressure recorded for the day of measurement (wunderground.com)

[4] Barometric readings at installation by date are as follows: 9/19/07 at 1124 hrs; 9/19/07 at 1553 hrs; 9/21/07 at 1453 hrs; and 9/22/07 at 0953 hrs

[1] Dg reading is recorded prior to sample collection from position reading B with the Geokon Vibrating Wire Readout Box (handheld unit).

Dg = Digits

ft = Feet

psi = Pounds per square inch

$P_c = (G \times (R_0 - R_1)) + (K \times (T_1 - T_0)) - (F \times (S_1 - S_0))$

$Dw = P_c \times (2.31 \text{ ft/psi})$

33.863 x inches Hg = mbar

Waterloo Monitoring Well Water Level Data
June 2010
Garvey Elevator Site
Hastings, Nebraska

Well ID	Date of Installation	R_0 Transducer Pressure Reading Before Installation (Dg)	T_0 Temperature Before Installation (°C)	S_0 Barometric Pressure Before Installation (in Hg)[4]	R_1 Transducer Pressure Reading Before Sampling (Dg)[1]	T_1 Temperature Before Sampling (°C)	S_1 Barometric Pressure Before Sampling (mbar)[3]	F Barometric Converstion factor (inches Hg to psi)
MW-19A	9/19/2007	8903.3	22.4	30.11	8462.1	12.2	29.95	0.4912
MW-19C	9/19/2007	8864.6	22.4	30.11	7742.1	12.4	29.95	0.4912
MW-20A	9/18/2007	8445.7	21.4	29.86	8069.6	12.2	29.95	0.4912
MW-20C	9/18/2007	8744.3	21.1	29.86	7639.2	12.2	29.95	0.4912
MW-20D	9/18/2007	8903.0	22.6	29.86	6826.7	12.7	29.95	0.4912
MW-20E	9/18/2007	8998.0	21.3	29.86	7259.4	12.5	29.95	0.4912
MW-30A	9/22/2007	8815.1	22.3	30.13	8423.2	12.4	29.95	0.4912
MW-30C	9/22/2007	8798.8	22.3	30.13	7568.1	12.4	29.95	0.4912
MW-30D	9/22/2007	8830.0	22.4	30.13	6646.2	12.7	29.95	0.4912
MW-30E	9/22/2007	8972.5	21.4	30.13	7262.0	12.7	29.95	0.4912
MW-31A	9/21/2007	8802.4	22.3	29.91	8446.0	12.2	29.95	0.4912
MW-31C	9/21/2007	8727.3	22.2	29.91	7619.8	12.4	29.95	0.4912

Well ID	K Thermal Factor	G Calibration Linear Gage Factor (Dg to psi)	Standard Factor (psi to ft water)	P_c Transducer Pressure corrected	Column of Water Above diaphram (ft)	D^D Depth to Transducer Diaphram (ft below TOC)[2]	Dw Depth to Water (ft btoc - 4" pvc)
MW-19A	-0.01592	0.01567	2.30814	7.15458	16.51377228	132.59497	116.08
MW-19C	-0.01648	0.01626	2.30814	18.495242	42.68960787	159.585232	116.90
MW-20A	-0.00921	0.01544	2.30814	5.847508	13.49686712	130.8349097	117.34
MW-20C	-0.01646	0.01621	2.30814	18.015957	41.58335099	158.695707	117.11
MW-20D	-0.01371	0.01495	2.30814	31.132206	71.85748996	188.6764688	116.82
MW-20E	-0.00215	0.02725	2.30814	47.351562	109.2940343	226.6744659	117.38
MW-30A	-0.00627	0.01654	2.30814	6.632515	15.30877317	133.2750627	117.97
MW-30C	-0.01349	0.01472	2.30814	18.337871	42.32637357	160.2961415	117.97
MW-30D	-0.00557	0.01433	2.30814	31.436299	72.55937917	190.6264514	118.07
MW-30E	0.00358	0.02779	2.30814	47.592065	109.8491489	228.4512433	118.60
MW-31A	-0.01104	0.01575	2.30814	5.704052	13.16575058	131.7892395	118.62
MW-31C	-0.01909	0.01555	2.30814	17.390968	40.14078888	158.7675277	118.63

[1] Readings (Pressure and temperature) for June 2010 sampling event collected on June 14, 2010

[2] The transducer diaphram is 6.25 inches (0.5208 ft) above the sample por

[3] Barometric pressure recorded for the day of measurement between 1300 and 1300 hrs was 29.95 in Hg/1014.4 mbar (wunderground.com

[4] Barometric readings at installation by date are as follows: 9/19/07 at 1124 hrs; 9/19/07 at 1553 hrs; 9/21/07 at 1453 hrs; and 9/22/07 at 0953 hr

[1] Dg reading is recorded prior to sample collection from position reading B with the Geokon Vibrating Wire Readout Box (handheld unit).

Dg = Digits

ft = Feet

psi = Pounds per square inch

$P_c = (G \times (R_0 - R_1)) + (K \times (T_1 - T_0)) - (F \times (S_1 - S_0))$

$Dw = P_c \times (2.31 \text{ ft/psi})$

33.863 x inches Hg = mbar

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Location Hastings NE Date 6/9/09

Project / Client Garvey Elevators / USEPA R7

Time	Well	DTW (toc)	DTB (toc)	Comments
14:25	mw01A	111.63	119.24	2" well
13:20	mw02A	115.09	121.17	2" well
14:10	mw03A	121.26	126.28	2" well
14:15	03B	119.19	135.33	4" well
14:05	03D	119.28	176.67	Transducer In well / 4"
14:20	03E	118.19	244.99	4" well
14:59	05A	117.14	123.08	2" Well
14:57	05B	118.27	133.59	4" well
14:56	05D	117.90	168.23	4" Transducer In well
13:01	06A	117.72	125.09	2" well
13:05	06D	117.69	169.39	4" well (Bentonite? muddy bottom)
13:10	06E	118.64	229.57	4" well
13:50	07A	107.75	118.76	2" well
13:55	07B	108.41	142.64	Transducer in well 4" well
13:30	08A	125.55	135.91	2" well
15:30	09A	111.16	120.82	2" well
16:20	10A	108.83	118.00	2" well Install lock
16:25	10B	109.75	124.97	4" well Install lock
16:15	11A	99.06	107.28	2" well Installed lock
17:40	12A	112.75	122.27	2" well
17:35	12C	113.70	168.02	4" well
16:58	13C	116.95	138.93	Transducer In well
16:40	14A	101.75	111.57	2" well

Location Hastings NE Date 6-9-09

Project / Client Garvey Elevators / USEPA R7

Time	Well	DTW	DTB	Comments
—	mw-16A	—	—	Could not locate
—	mw-16C	—	—	Could not locate
9:55	17A	93.89	107.85	2" well
9:56	17C	93.33	142.54	4" well
9:57	17D	93.32	195.90	4" well
10:45	18A	105.91	113.45	4" well
10:50	18C	108.61	147.85	4" well
10:55	18D	108.80	200.82	4" well
	19A			
	19C			
	20A			
	20C			
	20D			
	20E			
	30A			
	30C			
	31A			
	31C			
13:35	33	124.79	241.29	Hydraulic test well
15:16	MW-4A	118.86	122.25	2" well
15:10	MW-4B	118.66	131.43	2" well
16:59	MW-13E	117.00	240.69	4" well

Collected 6-10-09

Note: Data collected from wells 19, 20, 30, & 31 on 6-10-09 using Geldon - GK 401 Instrument. See Page 8 For Details. 6-10-09

Location Grand Island NE Date 6/10/01

Project / Client Garvey Elevators / USEPA R7

GEKon-4404 Readings

Well ID	Casing #	POS	Reading	temp °C
19A B	#1	B	2781.7 HZ	12.4
19B A	#2	B	2909.1 HZ	12.2
20A E	#1	B	2693.5 HZ	12.5
20C D	#2	B	2612.0 HZ	12.8
20D C	#3	B	2762.6 HZ	12.2
20E A	#4	B	2838.1 HZ	12.2
[illegible] 6/11/01				
Time 08.15				
30A E	#1	B	2693.9 HZ	12.8
30C D	#2	B	2575.9 HZ	12.9
30D C	#3	B	2749.2 HZ	12.5
30E A	#4	B	2902.3 HZ	12.5
[illegible] 6-11-01				
Time 08.30				
31A C	#1	B	2759.0 HZ	12.4
31C A	#2	B	2904.6 HZ	12.2
[illegible] 6-11-01				

10:54 JEO Josh Roleasen Begin collecting GeoCon Data From wells 19, 20, 30 and 31 See Page 9 For Tabular Details

12:00 Return to Site Office Demobe Equipment

12:15 Begin visual Reconn For Irrigation wells

13:05 @ Dept of Roads Employees Said well still there in Mixing Lane, by post

[signature]

Location Hastings NE Date 6/10/01

Project / Client Garvey Elevators / USEPA R7

Time	Well ID	POS	DE	HZ	US	Temp °C
11:10	19A B	B	7738.4	2781.8	359.4	12.5
11:15	19B A	B	8463.1	2909.1	343.7	12.2
11:17	20A E	B	7255.6	2693.6	371.2	12.6
11:20	20C D	B	6824.3	2612.2	382.7	12.8
11:22	20D C	B	7633.1	2762.7	361.9	12.2
11:25	20E A	B	8055.3	2838.1	352.3	12.3
11:32	30A E	B	7258.1	2694.0	371.1	12.8
11:35	30C D	B	6637.7	2576.4	388.1	12.8
11:37	30D C	B	7560.2	2749.5	363.6	12.4
11:40	30E A	B	8425.0	2902.5	344.5	12.5
11:48	31A C	B	7617.4	2760.0	362.3	12.5
11:52	31C A	B	8439.0	2904.9	344.2	12.2

[illegible] 6-11-01

[signature]

Location Hastings, NE Date 6/14/10

Project / Client Garvey Elevator / EPA R7

This logbook will record ground-water sampling activities at the Garvey Elevator Site in Hastings, Nebraska as part of an investigation for EPA Region 7. Activities will begin with gauging water levels at both OU1 and OU2. After gauging, sampling will begin. Samples will be collected for parameters specified in the Work Plan. Purging data will be recorded on the Low-Flow Ground-Water Sampling Log. The final readings at each location will be recorded in this logbook.

Location ~~Garvey~~ AF 6/14/10 Hastings, NE Date 6/14/10

Project / Client Garvey Elevator / EPA R7

Well	Date	Time	DTW BTOC	Notes
MW44D	6/14/10	1544	109.77	
MW44E	6/14/10	1543	109.86	DG 9/14/10
MW106A	6/14/10	1605	129.00	TD = 138' BTOC at sampling it
MW106C	6/14/10	1601	122.85	was 120.23 This DTW
MW106D	6/14/10	1601	122.96	on 6/14/10 incorrect
MW42D	6/14/10	1612	121.11	
MW42E	6/14/10	1612	121.14	
MW43D	6/14/10	1623	125.96	
MW43E	6/14/10	1623	125.86	
MW41D1	6/14/10	1633	119.97	
MW41D2	6/14/10	1633	119.63	
MW46D1	6/14/10	1641	114.59	
MW46D2	6/14/10	1641	114.72	
MW105A	6/14/10	1652	119.74	
MW105C	6/14/10	1650	121.10	
MW105D	6/14/10	1650	121.00	
MW104A	6/14/10	1707	105.34	
MW104C	6/14/10	1705	107.01	
MW104D	6/14/10	1704	106.98	
MW12A	6/14/10	1719	113.05	
MW12C	6/14/10	1719	113.89	
MW12D	6/14/10	1723	113.11	

AFletcher 6/14/10

Location Hastings, NE Date 6/14/10

Project / Client Garvey Elevator, EPA R7

Well	Date	Time	DTW BTOC
MW14A	6/14/10	1729	101.82
MW45C	6/14/10	1736	102.82
MW45D	6/14/10	1736	102.39
MW16A	6/14/10	1747	108.60
MW16C	6/14/10	1748	108.72
MW11A	6/14/10	1759	98.05
MW4B	6/15/10	0914	118.31
MW4A	6/15/10	0923	118.21
MW3A	6/15/10	0939	121.14
MW3B	6/15/10	0944	119.69
MW3E	6/15/10	0947	118.44
MW3D	6/15/10	0951	119.53
MW1A	6/15/10	1000	111.73
MW2A	6/15/10	1008	115.21
MW8A	6/15/10	1031	125.82
MW7~~B~~ AF 6/15/10 (E)A	6/15/10	1045	108.11
MW7~~A~~ (W)B	6/15/10	1042	108.78
MW9A	6/15/10	1058	111.43
MW13~~D~~E AF 6/15/10	6/15/10	1108	117.30
MW13C	6/15/10	1112	118.07
MW6E	6/15/10	1121	118.85
MW6D	6/15/10	1124	117.92

AFletcher 6/15/10

Location Hastings, NE Date 6/14/10

Project / Client Garvey Elevator, EPA R7

Well	Date	Time	DTW BTOC
MW6A	6/15/10	1127	117.80
MW5A	6/15/10	1141	116.87
MW5D	6/15/10	1145	118.16
MW5B	6/15/10	1350	117.97

Geokon Wells

Well	Date	Time	Digits	Temp
MW30E	6/15/10	1254	~~762~~ 7262.0	12.7
MW30D	6/15/10	1257	6646.2	12.7
MW30C	6/15/10	1300	7568.1	12.4
MW30A	6/15/10	1302	8423.2	12.4
MW31C	6/15/10	1309	7619.8	12.4
MW31A	6/15/10	1311	8446.0 AF 6/15/10	12.2
MW20E	6/15/10	1322	7259.4	12.5
MW20D	6/15/10	1323	6826.7	12.7
MW20C	6/15/10	1324	7639.2	12.2
MW20A	6/15/10	1326	8069.6	12.2
MW19C	6/15/10	1335	7742.1	12.4
MW19A	6/15/10	1336	8462.1	12.2

AFletcher 6/15/10

Location Hastings, NE Date 6/15/10
Project / Client Garvey Grain Elevator
R7 USEPA 82°F Sunny

Author: Bo Moreland
Teams: B. Moreland, Kyrie Jeffry.
Team 2: Justin Neilsen (com), Andrea Fletcher
equipment: Bladder pump S/N: 11587

41
46

Activities: Finish water levels At MW-17, 18 & 10. Start sampling At MW-18.

0700 Arrive onsite.
0715 start goin through sampling procedure w/ Jeff Gadt (HGL)
0745 start going through equipment & sample bottles to divide them up.
0830 mob out to local gas station to get gas ice & supplies.
0900 leave gas station & head off to start water levels.
See next page for water levels.

WM WM WM WM WM WM WM

Hastings, NE Date 6/15/10
Client Garvey Grain Elevator
R7 USEPA

13.62 93.59

0920 Arrive at MW-18A. WL = 106.82
see table below.

Date	Time	DTW	Well
~~6/15/10~~	~~0920~~	~~106.82~~	~~MW-18A~~
			~~MW-18B~~
~~6/15/10~~		~~108.89~~	~~MW-18C~~
	~~0924~~	~~109.07~~	~~MW-18D~~

WM

Well	DTW	Time	Date
18-A	106.82	0920	6/15/10
18C	108.89	0922	"
18D	109.07	0924	"
17A	94.12	0937	"
17C	93.62	0939	"
17D	93.59	0941	"

0935 Arrive at MW-17. See table above for details.

10A	108.71	0950	"
10B	109.68	09.52	"

0948 Arrive at MW-10. See Above for details.
1020 Arrive at to gather up buckets & tubing.
1030 Go over to sampling office to WM

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APPENDIX P

CALCULATION OF ESTIMATED HYDRAULIC CONDUCTIVITIES

MW-12D

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$v = 1.14 \ \mathrm{mm^2/s}$

$C = 0.06$

$\varphi(n) = 1 + 10 \cdot (n - 0.26)$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

K = **4.92E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **9.41E-04 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$
$$C = 1$$
$$\varphi(n) = n^{3.287}$$
$$n = 0.255 \cdot (1 + 0.83^{\eta})$$
$$\eta = d_{60}/d_{10}$$
$$d_e = d_{10}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **1.25E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.03E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-12D
Sample Date:	5-25-10
Interval:	168-172
Porosity:	.24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **3.52E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.49E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **1.04E-02 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **7.54E-03 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-12D
Sample Date: 5-25-10
Interval: 168-172
Porosity: .24

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.022
7.4	0.075
12.2	0.15
14.3	0.18
19.5	0.25
32	0.425
52.5	0.85
73.4	2
92.2	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
8	Gravel
92	Sand
0	Silt
0	Clay

MEASURED POROSITY: .24

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.79E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$
$$C = 0.048 \cdot d_{20}^{0.3}$$
$$\varphi(n) = 1$$
$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$
$$\eta = d_{60}/d_{10}$$
$$d_e = d_{20}$$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

MW-30

HydroGeoLogic, Inc. 4/6/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **4.56E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.06$

$\varphi(n) = 1 + 10 \cdot (n - 0.26)$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc. 4/6/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.25E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	-	Hydraulic conductivity	(cm/s)
g	-	Acceleration due to gravity	(m/s^2)
v	-	Viscosity	(mm^2/s)
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **2.13E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **4.78E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **2.87E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i \right) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **7.20E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **1.41E-01 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1} \right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **6.39E-02 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 115-119

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.056
2.2	0.075
4.9	0.106
6.3	0.15
11.4	0.25
27.3	0.425
51.6	0.85
77.1	2.36
86.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
13	Gravel
87	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **3.30E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **2.97E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.00E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **1.75E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **2.76E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	-	Hydraulic conductivity	$(\mathrm{cm/s})$
g	-	Acceleration due to gravity	$(\mathrm{m/s^2})$
v	-	Viscosity	$(\mathrm{mm^2/s})$
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **1.75E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **3.90E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

K = **9.91E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc. 4/6/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-30
Sample Date:	5/8/2007
Interval:	123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot (\ln d_{i+1} - \ln d_i)} \quad ^1$$

K = **3.93E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 123-127

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.031
1.6	0.075
3.1	0.106
8	0.15
35.1	0.25
56.5	0.425
73.5	0.85
91.2	2.36
97	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **8.85E-03 cm/sec**

VARIABLES

K	-	Hydraulic conductivity	(cm/s)
g	-	Acceleration due to gravity	(m/s^2)
v	-	Viscosity	(mm^2/s)
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{20}	-	Diameter at 20%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc. 4/6/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.80E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$v = 1.14\ \mathrm{mm^2/s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

K = **4.05E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **6.47E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **2.27E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **1.29E-02 cm/sec**

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

VARIABLES

K	-	Hydraulic conductivity	(cm/s)
g	-	Acceleration due to gravity	(m/s^2)
v	-	Viscosity	(mm^2/s)
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{17}	-	Diameter at 17%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **3.50E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **4.27E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc. 4/6/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot (\ln d_{i+1} - \ln d_i)}^{1}$$

K = **2.39E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 131-135

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.027
5.2	0.075
6.8	0.106
9.3	0.15
14.7	0.25
26.9	0.425
45.7	0.85
69.5	2.36
82.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
18	Gravel
82	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **2.89E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.048 \cdot d_{20}^{0.3}$

$\varphi(n) = 1$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{20}$

VARIABLES

K	-	Hydraulic conductivity	(cm/s)
g	-	Acceleration due to gravity	(m/s^2)
v	-	Viscosity	(mm^2/s)
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{20}	-	Diameter at 20%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.07E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.09E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	-	Hydraulic conductivity	(cm/s)
g	-	Acceleration due to gravity	(m/s^2)
v	-	Viscosity	(mm^2/s)
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **1.85E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID:	MW-30
Sample Date:	5/8/2007
Interval:	143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.35E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **2.43E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **6.64E-03 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.23E-01 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \; ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1} \right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad ^1$$

K = **5.71E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 143-147

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.042
2.3	0.075
3.8	0.106
5.6	0.15
12.4	0.25
30.1	0.425
51.6	0.85
75.5	2.36
90	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
10	Gravel
90	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **2.88E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.06$

$\varphi(n) = 1 + 10 \cdot (n - 0.26)$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

K = **7.19E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **2.60E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **4.57E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$0.61 < C < 1.07$

$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60} / d_{10}$

$d_e = d_{10}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **6.49E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \text{m/s}^2$$

$v = 1.14\ \text{mm}^2/\text{s}$

$C = 0.375$

$\varphi(n) = \frac{n^3}{(1-n)^2}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{17}$

K = **5.02E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID:	MW-30
Sample Date:	5/8/2007
Interval:	167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **8.58E-03 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **2.38E-01 cm/sec**

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}{}^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **9.03E-02 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 167-171

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.07
0.08	0.075
1.4	0.106
2.6	0.15
11.1	0.25
45.4	0.425
76.1	0.85
92.8	2.36
97.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **2.34E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

K = **5.06E-02 cm/sec**

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.74E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

K = **3.05E-02 cm/sec**

$v = 1.14\ \mathrm{mm^2/s}$

$0.61 < C < 1.07$

$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1 - n}} \right)^2$

$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$

$\eta = d_{60} / d_{10}$

$d_e = d_{10}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.66E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	-	Hydraulic conductivity	$(\mathrm{cm/s})$
g	-	Acceleration due to gravity	$(\mathrm{m/s^2})$
v	-	Viscosity	$(\mathrm{mm^2/s})$
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc. 4/6/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **4.04E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **7.01E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **1.84E-01 cm/sec**

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \quad {}^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **7.19E-02 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad {}^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

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HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 187-191

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05
0.9	0.075
1.8	0.106
4.2	0.15
14.3	0.25
44.2	0.425
77.1	0.85
92.6	2.36
96.9	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **2.15E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.048 \cdot d_{20}^{0.3}$

$\varphi(n) = 1$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60} / d_{10}$

$d_e = d_{20}$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 199-203

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **4.19E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 199-203

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

K = **1.37E-02 cm/sec**

$v = 1.14\ \mathrm{mm^2/s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 199-203

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

K = **2.39E-02 cm/sec**

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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4/6/2011

Sample ID: MW-30
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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **3.95E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **3.35E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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4/6/2011

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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **6.07E-03 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
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1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **1.46E-01 cm/sec**

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

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6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 199-203

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **5.94E-02 cm/sec**

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 199-203

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.034
1.6	0.075
2.6	0.106
5.4	0.15
15.8	0.25
42.7	0.425
71.4	0.85
91.9	2.36
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **2.06E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 203-207

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **8.98E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.06$

$\varphi(n) = 1 + 10 \cdot (n - 0.26)$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
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4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 203-207

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **2.83E-02 cm/sec**

$v = 1.14 \ \mathrm{mm^2/s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	-	Hydraulic conductivity	$(\mathrm{cm/s})$
g	-	Acceleration due to gravity	$(\mathrm{m/s^2})$
v	-	Viscosity	$(\mathrm{mm^2/s})$
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

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4/6/2011

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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.91E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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4/6/2011

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Interval: 203-207

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

K = **8.64E-02 cm/sec**

$$v = 1.14\ \mathrm{mm^2/s}$$
$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$
$$\varphi(n) = 1$$
$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$
$$\eta = d_{60}/d_{10}$$
$$d_e = d_{10}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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4/6/2011

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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **5.50E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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4/6/2011

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SIEVE ANALYSIS

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0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.20E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$
$$C = 4.35 \cdot 10^{-3}$$
$$\varphi(n) = \frac{n}{(1-n)^2}$$
$$n = 0.255 \cdot (1 + 0.83^{\eta})$$
$$\eta = d_{60}/d_{10}$$
$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

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HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}\ ^1$$

K = **2.60E-01 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 203-207

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **1.10E-01 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc. 4/6/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 203-207

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0305
1.4	0.075
1.7	0.106
2.7	0.15
6	0.25
24	0.425
53.7	0.85
80.8	2.36
93.7	4.75
100	9.5

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **4.40E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$
$$C = 0.048 \cdot d_{20}^{0.3}$$
$$\varphi(n) = 1$$
$$n = 0.255 \cdot (1 + 0.83^{\eta})$$
$$\eta = d_{60}/d_{10}$$
$$d_e = d_{20}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
7	Gravel
93	Sand
0	Silt
0	Clay

VARIABLES

K	-	Hydraulic conductivity	(cm/s)
g	-	Acceleration due to gravity	(m/s^2)
v	-	Viscosity	(mm^2/s)
C	-	Coefficient	–
$\varphi(n)$	-	Function of porosity	–
n	-	Porosity *	–
η	-	Uniformity	–
d_e	-	Effective grain diameter	(mm)
d_{10}	-	Diameter at 10%	(mm)
d_{20}	-	Diameter at 20%	(mm)
d_{60}	-	Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **5.62E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.21E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.90E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **7.35E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **3.75E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.53E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **1.92E-01 cm/sec**

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **1.07E-01 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot (\ln d_{i+1} - \ln d_i)} \quad ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.0365
1	0.075
1.3	0.106
2.1	0.15
8	0.25
14.5	0.425
24.6	0.85
46.6	2.36
73.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
27	Gravel
73	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **1.38E-01 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.11E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$v = 1.14 \ \mathrm{mm^2/s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60} / d_{10}$

$d_e = d_{10}$

K = **1.34E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **2.34E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **3.88E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **3.24E-02 cm/sec**

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **5.82E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

K = **1.37E-01 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1} \right)$

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **5.60E-02 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} \ ^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc.
6340 Glenwood, Building #7, Suite 200

4/6/2011

Sample ID: MW-30
Sample Date: 5/8/2007
Interval: 210-211

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03
2	0.075
2.8	0.106
5.2	0.15
16.4	0.25
43.2	0.425
70.7	0.85
89.3	2.36
96.5	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **2.01E-02 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

MW-41D2

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-41D2
Sample Date: 5-25-10
Interval: 199-203'
Porosity: .35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^\eta)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **8.08E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-41D2
Sample Date:	5-25-10
Interval:	199-203'
Porosity:	.35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$v = 1.14\ \mathrm{mm^2/s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

K = **2.25E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-41D2
Sample Date: 5-25-10
Interval: 199-203'
Porosity: .35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **3.84E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-41D2
Sample Date:	5-25-10
Interval:	199-203'
Porosity:	.35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **7.70E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-41D2
Sample Date:	5-25-10
Interval:	199-203'
Porosity:	.35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **6.57E-03 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.375$

$\varphi(n) = \frac{n^3}{(1-n)^2}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{17}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-41D2
Sample Date: 5-25-10
Interval: 199-203'
Porosity: .35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **2.34E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-41D2
Sample Date: 5-25-10
Interval: 199-203'
Porosity: .35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **4.74E-02 cm/sec**

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^\eta)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \quad {}^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1} \right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-41D2
Sample Date: 5-25-10
Interval: 199-203'
Porosity: .35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)}\ ^{1}$$

K = **2.11E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-41D2
Sample Date: 5-25-10
Interval: 199-203'
Porosity: .35

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05446
7	0.075
17.9	0.15
22.5	0.18
30.6	0.25
44.3	0.425
66	0.85
88.3	2
97.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .35

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **6.37E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

MW-42E

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **8.15E-03 cm/sec**

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **2.09E-03 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **3.51E-03 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

K = **9.75E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{17}$$

K = **6.28E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.70E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-42E
Sample Date:	5-25-10
Interval:	197-201
Porosity:	.33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

K = **3.06E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

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HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.45E-02 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$0.007 < C < 0.24$

$\varphi(n) = \left(\frac{n}{1-n}\right)^2$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot (\ln d_{i+1} - \ln d_i)} {}^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 197-201
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.04777
6.6	0.075
16	0.15
20.7	0.18
31.7	0.25
57.8	0.425
87.6	0.85
97.2	2
98.6	4.75
98.8	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
1	Gravel
99	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **7.52E-03 cm/sec**

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.048 \cdot d_{20}^{0.3}$

$\varphi(n) = 1$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{20}$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

K = **5.06E-03 cm/sec**

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-42E
Sample Date:	5-25-10
Interval:	208-212
Porosity:	.34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.35E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **2.29E-03 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

K = **5.77E-03 cm/sec**

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **5.48E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-42E
Sample Date:	5-25-10
Interval:	208-212
Porosity:	.34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.13E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **2.00E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^\eta)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \, ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)}^{1}$$

K = **9.43E-03 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-42E
Sample Date: 5-25-10
Interval: 208-212
Porosity: .34

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03198
10.2	0.075
18	0.15
23.4	0.18
40.5	0.25
79.5	0.425
90.5	0.85
93	2
96.7	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
3	Gravel
97	Sand
0	Silt
0	Clay

MEASURED POROSITY: .34

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$
$$C = 0.048 \cdot d_{20}^{0.3}$$
$$\varphi(n) = 1$$
$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$
$$\eta = d_{60}/d_{10}$$
$$d_e = d_{20}$$

K = **6.14E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

MW-43E

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$v = 1.14 \text{ mm}^2/\text{s}$

$C = 0.06$

$\varphi(n) = 1 + 10 \cdot (n - 0.26)$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

K = **7.42E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

SLICHTER METHOD

$$K = \frac{g}{\nu} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$\nu = 1.14 \text{ mm}^2/\text{s}$

K = **1.90E-03 cm/sec**

$C = 1$

$\varphi(n) = n^{3.287}$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
ν	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-43E
Sample Date:	5-25-10
Interval:	183-187
Porosity:	.33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}} \right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **3.19E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **9.34E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **5.66E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.31E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **2.39E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}{}^{1}$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-43E
Sample Date:	5-25-10
Interval:	183-187
Porosity:	.33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.13E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} {}^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-43E
Sample Date: 5-25-10
Interval: 183-187
Porosity: .33

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.05131
7	0.075
17.2	0.15
22.8	0.18
38.7	0.25
77.5	0.425
99	0.85
99.7	2
100	4.75

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **6.49E-03 cm/sec**

$v = 1.14 \ \mathrm{mm^2/s}$

$C = 0.048 \cdot d_{20}^{0.3}$

$\varphi(n) = 1$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{20}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .33

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

MW-44E

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-44E
Sample Date: 5-25-10
Interval: 203-207
Porosity: .37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **9.28E-03 cm/sec**

$v = 1.14 \text{ mm}^2\text{/s}$

$C = 0.06$

$\varphi(n) = 1 + 10 \cdot (n - 0.26)$

$n = 0.255 \cdot (1 + 0.83^{\eta})$

$\eta = d_{60}/d_{10}$

$d_e = d_{10}$

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	$(\text{mm}^2\text{/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-44E
Sample Date:	5-25-10
Interval:	203-207
Porosity:	.37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **2.80E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-44E
Sample Date:	5-25-10
Interval:	203-207
Porosity:	.37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.85E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-44E
Sample Date:	5-25-10
Interval:	203-207
Porosity:	.37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **9.85E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

EasySolve Software LLC
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HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-44E
Sample Date: 5-25-10
Interval: 203-207
Porosity: .37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{17}$$

K = **7.96E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-44E
Sample Date: 5-25-10
Interval: 203-207
Porosity: .37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.29E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-44E
Sample Date: 5-25-10
Interval: 203-207
Porosity: .37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **2.93E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i} \; ^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-44E
Sample Date: 5-25-10
Interval: 203-207
Porosity: .37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

K = **1.23E-02 cm/sec**

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)} {}^1$$

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-44E
Sample Date:	5-25-10
Interval:	203-207
Porosity:	.37

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.03993
6.4	0.075
18.3	0.15
26.8	0.18
53.5	0.25
92.6	0.425
99.4	0.85
99.9	2
100	4.75

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **5.72E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
0	Gravel
100	Sand
0	Silt
0	Clay

MEASURED POROSITY: .37

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

MW-45D

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	141-145
Porosity:	.29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **8.28E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 141-145
Porosity: .29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.82E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 141-145
Porosity: .29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

K = **2.87E-03 cm/sec**

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60} / d_{10}$$

$$d_e = d_{10}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 141-145
Porosity: .29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.29E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	141-145
Porosity:	.29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

K = **5.38E-03 cm/sec**

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 141-145
Porosity: .29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.79E-03 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	141-145
Porosity:	.29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}^{1}$$

K = **2.53E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	141-145
Porosity:	.29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)}^{1}$$

K = **1.35E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 141-145
Porosity: .29

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.06017
6.6	0.075
12.6	0.15
16.1	0.18
25.7	0.25
50.7	0.425
79.7	0.85
92.1	2
98	4.75
100	9.5

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **1.09E-02 cm/sec**

SIZE DISTRIBUTION

Percent	Size
0	+3"
2	Gravel
98	Sand
0	Silt
0	Clay

MEASURED POROSITY: .29

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 164-168'
Porosity: .32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

HAZEN METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.06$$

$$\varphi(n) = 1 + 10 \cdot (n - 0.26)$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **4.32E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	164-168'
Porosity:	.32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

SLICHTER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

K = **1.06E-03 cm/sec**

$$C = 1$$

$$\varphi(n) = n^{3.287}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	164-168'
Porosity:	.32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

TERZAGHI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.61 < C < 1.07$$

$$\varphi(n) = \left(\frac{n - 0.13}{\sqrt[3]{1-n}}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **1.77E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 164-168'
Porosity: .32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

BEYER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(\mathrm{n}) \cdot d_e^2 \quad where: \quad g = 9.81 \ \mathrm{m/s^2}$$

$$v = 1.14 \ \mathrm{mm^2/s}$$

$$C = 0.06 \cdot \log\left(\frac{500}{\eta}\right)$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{10}$$

K = **5.22E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 164-168'
Porosity: .32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

SAUERBREI METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.375$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^{\eta})$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{17}$$

K = **2.93E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{17}	- Diameter at 17%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	164-168'
Porosity:	.32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

KRUGER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 4.35 \cdot 10^{-3}$$

$$\varphi(n) = \frac{n}{(1-n)^2}$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{2}{d_{i+1} + d_i}$$

K = **1.08E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	$(\mathrm{cm/s})$
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

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www.easysolve.com (970) 319-1591

HydroGeoLogic, Inc
6340 Glenwood, Building #7, Suite 200

4/1/2011

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 164-168'
Porosity: .32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

KOZENY METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81\ \mathrm{m/s^2}$$

$$v = 1.14\ \mathrm{mm^2/s}$$

$$C = 0.83$$

$$\varphi(n) = \frac{n^3}{(1-n)^2}$$

$$n = 0.255 \cdot (1 + 0.83^\eta)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} (f_{i+1} - f_i) \cdot \frac{d_{i+1} + d_i}{2 \cdot d_{i+1} \cdot d_i}\ ^1$$

K = **1.60E-02 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	$(\mathrm{m/s^2})$
v	- Viscosity	$(\mathrm{mm^2/s})$
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

HydroGeoLogic, Inc 4/1/2011

6340 Glenwood, Building #7, Suite 200

Sample ID:	MW-45D
Sample Date:	5-25-10
Interval:	164-168'
Porosity:	.32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

ZUNKER METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$0.007 < C < 0.24$$

$$\varphi(n) = \left(\frac{n}{1-n}\right)^2$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$\frac{1}{d_e} = \sum_{i-1}^{j-1} \left(f_{i+1} - f_i\right) \cdot \frac{d_{i+1} - d_i}{d_{i+1} \cdot d_i \cdot \left(\ln d_{i+1} - \ln d_i\right)}^{1}$$

K = **8.16E-03 cm/sec**

[1] When $d_1 < 0.0025$ the following term is added: $\left(\frac{3}{2} \cdot \frac{f_2 - f_1}{d_1}\right)$

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{60}	- Diameter at 60%	(mm)
d_i	- Diameter of fraction i	(mm)
f_i	- Fraction i of sample	–
i	- Fraction number	–
j	- Number of fractions	–

* May substitute measured porosity.

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www.easysolve.com (970) 319-1591

HydroGeoLogic, Inc 4/1/2011
6340 Glenwood, Building #7, Suite 200

Sample ID: MW-45D
Sample Date: 5-25-10
Interval: 164-168'
Porosity: .32

HYDRAULIC CONDUCTIVITY CALCULATED FROM SIEVE ANALYSIS

SIEVE ANALYSIS

Percent	Diameter
0	0.02929
10.4	0.075
21.5	0.15
26.1	0.18
36.8	0.25
60.3	0.425
84	0.85
92	2
96.1	4.75
98.1	9.5
100	12.5

SIZE DISTRIBUTION

Percent	Size
0	+3"
4	Gravel
96	Sand
0	Silt
0	Clay

MEASURED POROSITY: .32

USBR METHOD

$$K = \frac{g}{v} \cdot C \cdot \varphi(n) \cdot d_e^2 \quad where: \quad g = 9.81 \text{ m/s}^2$$

$$v = 1.14 \text{ mm}^2/\text{s}$$

$$C = 0.048 \cdot d_{20}^{0.3}$$

$$\varphi(n) = 1$$

$$n = 0.255 \cdot \left(1 + 0.83^{\eta}\right)$$

$$\eta = d_{60}/d_{10}$$

$$d_e = d_{20}$$

K = **4.24E-03 cm/sec**

VARIABLES

K	- Hydraulic conductivity	(cm/s)
g	- Acceleration due to gravity	(m/s^2)
v	- Viscosity	(mm^2/s)
C	- Coefficient	–
$\varphi(n)$	- Function of porosity	–
n	- Porosity *	–
η	- Uniformity	–
d_e	- Effective grain diameter	(mm)
d_{10}	- Diameter at 10%	(mm)
d_{20}	- Diameter at 20%	(mm)
d_{60}	- Diameter at 60%	(mm)

* May substitute measured porosity.

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APPENDIX Q

CHAIN OF CUSTODY FORMS

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USEPA Chain of Custody Forms

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CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID BZA72Z01	4-5 / 08 / 09	1 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	4 VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4518-35	3				3		X				Extra Volume for MS/MSD
4518-36	1				1		X				
4518-37	1				1		X				
4518-38	1				1		X				
4518-39	1				1		X				
4518-40	1				1		X				
4518-41	1				1		X				
4518-42	1				1		X				
4518-43	1				1		X				
4518-44	1				1		X				
4518-44-FD	1				1		X				
-46	1				1		X				
-47	1				1		X				
-48	1				1		X				
-48FD	1				1		X				
-50	1				1		X				
-51	1				1		X				
-52	1 (AB)				1		X				
-53	1 8/4/09				1		X				
-53-FD					1		X				
-55					3		X				Extra Volume for MS/MSD 3 sets of 3 VOAs.
-56					3 (AB) 8/4/09		X				
-57					3 (AB) 8/4/09		X				
-58					1						

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
4 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☐	8-5-09	1650	SEALED ☐ UNSEALED ☐	
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj. ID BZA7ZZ01	~~04~~5 / 08 / 09	2 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	8oz BOTTLE	BOTTLE	BOTTLE	4 VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	TYPE OF CONTAINERS — NUMBERS OF CONTAINERS PER SAMPLE NUMBER					SAMPLED MEDIA					
4518-59					1		X				
-60					1		X				
-60-FD					1		X				
-62					1		X				
-63					1		X				
-64					1		X				
-65					3		X				Extra Volume for MS/MSD 3 VOAs per set
-66					1		X				
-66-FD					1		X				
-68					1		X				
-69					1		X				
-70					1		X				
-71					1		X				
-71-FD					1		X				
-1		2			1		X				Extra Volume for MS/MSD in 8oz glass jars.
-2		2			1		X				
-3		2			1		X				
-4		2			1		X				
-4FD		2			1		X				
-73					1		X				
-74					1		X				
-75					1		X				
-75-FD					1		X				
-77					1		X				

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
4 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	BZA7ZZ01 (Proj. ID)	4-6 / 8 / 09	3 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	4 VOA SET (3 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4518-78					1		X				
-79					1		X				
-80					1		X				
-81					1		X				
-82					1		X				
-83					1		X				
-84					1		X				
-85					1		X				
-86					1		X				
-87					1		X				
-88					1		X				
-89					1		X				
-90					1		X				
-91					1		X				
-92					1		X				
-92FD					1		X				
-94					3		X				Extra Volume for MS/MSD 3 sets of 3 VOAs
-95					1		X				
-96					1		X				
-97					1		X				

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

Abby Broadstone 8/15/09 Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
4 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY (SAMPLER) [signature] SEALED / UNSEALED	8-5-09	1650	SEALED / UNSEALED	
RELINQUISHED BY SEALED / UNSEALED			SEALED / UNSEALED	
RELINQUISHED BY SEALED / UNSEALED			SEALED / UNSEALED	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID BZA72Z01	5-6 / 08 / 2009	1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	8oz BOTTLE	BOTTLE	BOTTLE	#VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4518-98					1		X				
4518-99		2			1		X				
-7		2			1		X				
-8		2			1		X				
-8-FD		2			1		X				
-10		2			1		X				
-11		2			1		X				
-12		2			1		X				
-13		2			1		X				
-13FD		2			1		X				
-15		2			1		X				
-16		2			1		X				
-17		2			1		X				
-18		2			1		X				
-19		2			1		X				
-19-FD		2			1		X				
-21		2			3		X				Extra Volume for MS/MSD 2 FULL 8-oz jar & 3 sets of 3 VOAs
-22		2			1		X				
-23		2			1		X				
-24		2			1		X				
-25		2			1		X				
-26		2			1		X				
-27		2			1		X				
-28		3	Not Complete 8-6-09				X				Extra Volume for MS/MSD for PCBs

24

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
4 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] X SEALED / UNSEALED	8-6-09	1730	SEALED / UNSEALED	
RELINQUISHED BY SEALED / UNSEALED	DATE	TIME	RECEIVED BY SEALED / UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED / UNSEALED	DATE	TIME	RECEIVED BY SEALED / UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER (Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY MONTH YEAR)	SHEET
Brian Zurbuchen	Proj ID BZA7ZZ01	5-6 08 2009	2 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	8oz BOTTLE	BOTTLE	BOTTLE	4 VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4518-29		1					X				
-30		1					X				
-31		1					X				
-32		1					X				
-33		1					X				
-100		2					X				
-101		2					X				
-102		2					X				
-103		2					X				
-104					1		X				
-105					1		X				
-106					1		X				
-107					1		X				
-108					1		X				
-109		1			~~1~~ AB		X				
-109 FD		1			~~1~~ AB		X				
-110		1			~~1~~ AB		X				
-111		1			~~1~~ AB		X				
-112					1		X				
-113					1		X				
-114					1		X				
-115					1		X				
-116					1		X				

8-6-09 Not complete

23

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

4 ICE CHEST(S); OTHER ____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

____ COURIER

____ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] X SEALED ☐ UNSEALED	8-6-09	1300	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID BZA727Ø1	6 / 08 / 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	8oz. BOTTLE	BOTTLE	BOTTLE	4 VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4518-117					1		X				
-118					1		X				
-119					3		X				Extra Volume for MS/MSD 3 sets of 3 VOAs
-120					1		X				
-121		1					X				
-122		1			1		X				
~~-123~~											AB 8/6/09
-123		1			1		X				
-124		1			1		X				
-125		1					X				
-126		1					X				
-126 FD		1					X				
-128		1					X				

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

8-6-09 Not complete

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

1 ICE CHEST(S); OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ ~~COURIER~~

✓ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☒	8/7/2009	16:21	[signature] SEALED ☐ UNSEALED ☒	Analy
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
[illegible]	[illegible] 7A7Z01	6 (DAY) 08 (MONTH) 09 (YEAR)	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	12 8oz BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER					SAMPLED MEDIA					
4519-1		2				X					

6-8-6-09

Not complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
1 ICE CHEST(S): OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Alan Riley ☐ SEALED UNSEALED ☒	8/21/2009	16:21	[signature] ☐ SEALED UNSEALED ☒	Anal[illegible]
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID BZA72201	6 / 8 / 09	1 of 1

CONTENTS OF SHIPMENT 8-6-09

SAMPLE NUMBER	TYPE OF CONTAINERS: 2 VOA Set CUBITAINER	BOTTLE	BOTTLE	BOTTLE	4 VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4520-1	1				1	X					

8-6-09

Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S): OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED ☒	8/7/2009	16:21	[signature] ☐ SEALED UNSEALED ☐	Analy
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID: BZA7ZZ01	7 / 08 / 09	1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	8 OZ BOTTLE	BOTTLE	4 BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4518-129					1		X				
-130					1		X				
-131					1		X				
-132					1		X				
-133					1		X				
-134					1		X				
-135					1		X				
-136					1		X				
-137					1		X				
-34		2					X				
-138					1		X				
-139					1		X				
-140					1		X				
-141					1		X				
-142					1		X				
-143					1		X				
-144					3		X				Extra Volume for MS/MSD 3 sets of 3 VOAS
-145					1		X				
-146					1		X				
-147					1		X				
-148					1		X				
-149					1		X				
-150					1		X				
-151					1		X				

DESCRIPTION OF SHIPMENT

___ PIECE(S) CONSISTING OF ___ BOX(ES)

2 ICE CHEST(S); OTHER ___

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

___ COURIER

___ SAMPLER CONVEYED

___ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☐	8-10-09	1745	SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurcbuelen	Proj ID BZA72Z01	7 / 08 / 09	2 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	4 VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4518-152					1		X				
-153					1		X				

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

____ COURIER

____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED ☐	8-10-09	1745	☐ SEALED UNSEALED ☐	
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	Proj ID BZA7Z201	07-10 (DAY) 08 (MONTH) 09 (YEAR)	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	4 VOA set BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
#4520-2		3			3	X					Extra volume for MS/MSD
-37-FB		1			1	X					
-3		1			1	X					
-4		1			1	X					
-5		1			1	X					
-6		1			1	X					4 upressered VOAs for LDLVOA
-6-FD		1			1	X					"
-8		1			1	X					"
-9		1			1	X					"
-10		1			1	X					"

TYPE OF CONTAINERS — NUMBERS OF CONTAINERS PER SAMPLE NUMBER; SAMPLED MEDIA

[signature] 8-10-09

Not complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
2 ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☐	8-10-09	~~1715~~ 1745 8/10	SEALED ☐ UNSEALED ☐	
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Pco; ID: BZA72301	11 / 08 / 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	4 VOAs BOTTLE	~~4 128oz~~ BOTTLE AB	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4520-38-FB		1			1	X					
4520-11		1			1	X					
-12		1			1	X					

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

8-12-09
Not Complete

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

3 ICE CHEST(S); OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

X SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☑	8/12/09	12:05	[signature] SEALED ☐ UNSEALED ☒	Rec'd at lab
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID BZA72701	11 / 08 / 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	1-L/8oz BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4519-2			2			X					Filled Full for Extra Volume for MS/MSD
-2FD			2			X					
-4			2			X					

8-12-09
Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
3 ICE CHEST(S); OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED ☑	8/12/09	1205	RD Wiggans ☐ SEALED UNSEALED ☑	Rec'd at lab
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
ZURBUCHEN, BRIAN	SEDIMENT SAMPLING-BZA72201	19 AUG 2009	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2-8oz JARS BOTTLE	VOA SET ~~(2 VIALS EA)~~ (4 VIALS)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4525-1				1	1			X			
4525-2				1	1			X			
4525-3				1	1			X			
4525-3FD				1	1			X			
4525-5				1	1			X			
4525-6				1	1			X			
4525-7				1	3			X			extra volume for MS/MSD
4525-8				1	1			X			
4525-9				1	1			X			
4525-10				1	1			X			
4525-11				1	1			X			ASR COMPLETE

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

R Kasp 8/19/09

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

____ COURIER

____ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
R Kasp; [X] SEALED [ ] UNSEALED	8/19/09	17:30	[ ] SEALED [ ] UNSEALED	SHIP TO EPA LAB
RELINQUISHED BY; [ ] SEALED [ ] UNSEALED	DATE	TIME	RECEIVED BY; [ ] SEALED [ ] UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY; [ ] SEALED [ ] UNSEALED	DATE	TIME	RECEIVED BY; [ ] SEALED [ ] UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY MONTH YEAR)	SHEET
Brian Zurbuchen	Garvey Elevator OU 2	18 08 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	4 vial VOA ~~BOTTLE~~ set	3 VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4523-23				1	1	X					
4523-1				1	1	X					
4523-2				1	1	X					
4523-3				1	1	X					
4523-4				1	1	X					
4523-48-FB				1	1	X					Trip blank
4523-5				3	3	X					extra Volume MS/MSD

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

8-20-09
Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
1 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED
	(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☑ SEALED ☐ UNSEALED	8-20-09	1800	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Garvoy Grain Site OU 2	20 / 8 / 09	1 of 2

CONTENTS OF SHIPMENT: ~~PCO SID: BZA72Z02~~

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	VOA SET 4 ~~BOTTLE~~ VIALS 3	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
~~4523-5~~	~~[illegible]~~			~~3~~	~~3~~	~~X~~					~~Extra Volume for MS/MSD~~
~~4523-6~~											
4523-6-FD				1	1	X					Field Duplicate
4523-6				1	1	X					
4523-8				1	1	X					
4523-9				1	1	X					
4523-10				1	1	X					
4523-11				1	1	X					
4523-11-FD				1	1	X					
4523-13				1	1	X					
4523-14				1	1	X					
4523-15				1	1	X					
4523-16				1	1	X					
4523-17				1	1	X					~~Trip Blank~~ LS
4523-49-FB				1							Trip Blank

Not Complete
8-24-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
______ PIECE(S) CONSISTING OF ______ BOX(ES)	______ COMMERCIAL CARRIER: ______
______ ICE CHEST(S); OTHER ______	______ COURIER
	______ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED / UNSEALED			SEALED / UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED / UNSEALED			SEALED / UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED / UNSEALED			SEALED / UNSEALED	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
ZURBUCHEN, BRIAN	BZA72202 (PROJECT I.D.)	21-23 / AUG / 2009	2 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	~~BOTTLE~~ BPB-2 VIALS	VOA SET ~~(2 VIALS EA)~~ 4 VIALS	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	TYPE OF CONTAINERS (NUMBERS OF CONTAINERS PER SAMPLE NUMBER) 9/20/09					SAMPLED MEDIA					
4523-24				1	1	X					
4523-25				1	1/4*	X					* only 1 vial filled - insufficient volume for other 3
4523-26				1	1	X					
4523-27				1	1	X					
4523-28				1	1	X					
4523-28FD				1	1	X					
4523-30				1	1	X					
4523-31				1	1	X					
4523-32				1	1	X					
4523-33				1	1	X					
4523-34				1	1	X					
4523-35				1	1	X					
4523-36				3	3	X					extra volume for MS/MSD
4523-37				1	1	X					
4523-38				1	1	X					
4523-39				1	1	X					

8-24-09

Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	Garver Elevator / OU 2	23 DAY 08 MONTH 09 YEAR	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	VOA SET ~~4 BOTTLES~~	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4522-1				1	1	X					
4522-2				3	3	X					Extra Volume For MS/MSD
4522-3				1	1	X					
4522-3-FD				1	1	X					
4522-5				1	1	X					
4522-6				1	1	X					
4522-7				1	1	X					
4522-8				1	1	X					
4522-9				1	1	X					
4522-10				1	1	X					
4522-231FB				1	1	X					Trip Blank

8/24

8/24

Not Complete

8-24-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED / UNSEALED			SEALED / UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED / UNSEALED			SEALED / UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED / UNSEALED			SEALED / UNSEALED	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	Garvey elevator / OU 2	24 DAY 08 MONTH 09 YEAR	1 of 1

CONTENTS OF SHIPMENT Proj ID: BZA72Z02

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	VOA SET 4 vials BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4522-11				1	1	X					
4522-11-FD				1	1	X					Field Duplicate Sample.
4522-13				1	1	X					
4522-14				1	1	X					
4522-15				1	1	X					
4522-16				1	1	X					
4522-17				1	1	X					
4522-18				1	1	X					
4522-19				1	1	X					
4522-20				1	1	X					ASR NOT COMPLETE

8-26-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
1 ICE CHEST(S): OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED ☒	8/26/09	14:50	RD Wiggins ☐ SEALED UNSEALED ☒	Rec'd at lab
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proizd RZA7ZZ01	24 / 8 / 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	6-L Summa canisters (CUBITAINER)	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other: air	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4521-1	X									X	
-2	X									X	
-3	X									X	
-4	X									X	
-5	X									X	
-6	X									X	
-7	X									X	
-8	X									X	
-9	X									X	
-10	X									X	
-11	X									X	
-12	X									X	
-13	X										
-14	X										
-15	X										
-15FD	X										
-16	X										
-17	X										
-18	X										
-19	X										
-20	X										
-21	X										
-22	X										

Complete

DESCRIPTION OF SHIPMENT

___ PIECE(S) CONSISTING OF 6 BOX(ES)

___ ICE CHEST(S); OTHER ___

MODE OF SHIPMENT

___ COMMERCIAL CARRIER: ___

___ COURIER

X SAMPLER CONVEYED

___ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Leah Sperga; SEALED ☐ UNSEALED ☒	8/25/09	14:05	[signature]; SEALED ☐ UNSEALED ☒	Analysis
RELINQUISHED BY; SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY; SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY; SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY; SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj ID B7A72701	24 / 8 / 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VIALS (U) BOTTLE F(T)	VOA SET (2 VIALS EA) 4 rk 8/24/09	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4523-40				1	3/4	X					one vial was damaged
4523-41				1	1	X					
4523-42											
4523-43				1	1	X					

(Columns header: TYPE OF CONTAINERS / SAMPLED MEDIA; NUMBERS OF CONTAINERS PER SAMPLE NUMBER)

Not Complete

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

1 ICE CHEST(S); OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

X SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Leah Sperger — SEALED ☐ UNSEALED ☒	8/25/09	1405	Nicol Rohlz — SEALED ☐ UNSEALED ☒	Analysis
RELINQUISHED BY — SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY — SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY — SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY — SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	BZA72Z02	25 (DAY) AUG (MONTH) 2009 (YEAR)	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VIALS of BOTTLE F/D	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER				4 of 8/25/09						
4523-44				1	1	X					
4523-45				1	1	X					
4523-46				1	1	X					
4523-46FD				1	1	X					ASR COMPLETE

RKaspzyk
8/26/09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
1 ICE CHEST(S); OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
RKaspzyk ☐ SEALED ☒ UNSEALED	8/26/09	14:50	RDWiggans ☐ SEALED ☒ UNSEALED	Rec'd at lab
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print): brian Zurbuchen

NAME OF SURVEY OR ACTIVITY: BZA72Z02

DATE OF COLLECTION: 01 (DAY) 09 (MONTH) 09 (YEAR)

SHEET 1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	~~BOTTLES~~ VOA SET 40 mLs	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4522-21				1	1	X					
4522-22				1	1	X					
4522-23				1	1	X					
4522-24				1	1	X					
4522-25				3	3	X					Extra Volume For MS/MSD
4522-26				1	1	X					
4522-26-FD				1	1	X					Field Duplicate Sample
4522-28				1	1	X					
4522-29				1	1	X					
4522-30				1	1	X					
4522-31				1	1	X					

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

9-1-09

Not Complete

...OF SHIPMENT

...CONSISTING OF ______ BOX(ES)

...(S): OTHER ______

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

___ COURIER

___ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

...ODY RECORD

(SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
UNSEALED ☐	9-1-09	1730	☐ SEALED UNSEALED ☐	
UNSEALED ☐			☐ SEALED UNSEALED ☐	
UNSEALED ☐			☐ SEALED UNSEALED ☐	

...88)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
ZURBUCHEN, BRIAN	B2A 72202	1 / SEPT. / 2009	2 of ~~2~~ 9

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VIALS BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER				4 VIALS						
4522-100				1	1	X					
4522-101				1	1	X					
4522-102				1	1	X					
4522-103				1	1	X					
4522-103FD				1	1	X					
4522-105				1	1	X					
4522-232FB				1	1	X					Trip Blanks

Not Complete
9-1-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
2 ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
X SEALED ☐ UNSEALED	9-1-09	1730	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	BZH72Z02/Garvey OU2	2 / 9 / 09	1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	4 oz VOA Soil ~~BOTTLE~~ Vials	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	TYPE OF CONTAINERS — NUMBERS OF CONTAINERS PER SAMPLE NUMBER					SAMPLED MEDIA					
4522-32				1	1	X					
4522-33				1	1	X					
4522-34				1	1	X					
4522-35				1	1	X					
4522-36				1	1	X					
4522-36-FD				1	1	X					Field Duplicate.
4522-38				3	3	X					Extra volume for MS/MSD
4522-39				1	1	X					
4522-40				1	1	X					
4522-41				1	1	X					
4522-42				1	1	X					

Not Complete
[signature]
9-2-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
X 2 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] X SEALED / UNSEALED	9-2-09	1730	SEALED / UNSEALED	
RELINQUISHED BY — SEALED / UNSEALED	DATE	TIME	RECEIVED BY — SEALED / UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY — SEALED / UNSEALED	DATE	TIME	RECEIVED BY — SEALED / UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
ZURBUCHEN, BRIAN	BZA72Z02	1-2 SEPT 2009	2 of ~~X~~ 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VOAS HCl BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4522-106				1	1	X					
4522-107				1	1	X					
4522-108				1	1	X					
4522-233-FB				1	1	X					TRIP BLANK
4522-109				1	1	X					
4522-110				1	1	X					
4522-111				1	1	X					
4522-112				1	1	X					
4522-113				1	1	X					

Not complete

DESCRIPTION OF SHIPMENT

___ PIECE(S) CONSISTING OF ___ BOX(ES)

2 ICE CHEST(S): OTHER ___

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

___ COURIER

___ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☒ SEALED ☐ UNSEALED	9-2-09	1730	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9262(Revised 5/85) *U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	BZA-72Z02/Garvey OU 2	3 / 09 / 09	1 of ~~3~~ 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	~~BOTTLE~~ VOA Set 4 VIA	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4522-43				1	1	X					
4522-43-FD				1	1	X					Field Duplicate
4522-45				1	1	X					
4522-46				1	1						

TYPE OF CONTAINERS — NUMBERS OF CONTAINERS PER SAMPLE NUMBER; SAMPLED MEDIA

[signature] 9-3-09

Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
1 ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] X SEALED / UNSEALED	9-3-09	1730	SEALED / UNSEALED	
RELINQUISHED BY — SEALED / UNSEALED	DATE	TIME	RECEIVED BY — SEALED / UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY — SEALED / UNSEALED	DATE	TIME	RECEIVED BY — SEALED / UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	BZA72Z02	3 / SEPT / 09	~~1~~ 2 of ~~1~~ 3

CONTENTS OF SHIPMENT 8293

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VIALS ECD BOTTLE	VOA SET (~~2~~ 4 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER 4 9/3/09										
4522-118				1	1	X					
4522-119				1	1	X					
4522-119 FD				1	1	X					
4522-121				1	1	X					

9-3-09

Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
1 ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] X SEALED ☐ UNSEALED	9-3-09	1730	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

9-3

ACTIVITY LEADER (Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
ZURBUCHEN, BRIAN	BZA 72202	2-3 SEPT 2009	~~X~~ of ~~X~~ 3 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VIALS W BOTTLE ~~BD~~ 4/3/09	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4522-114				1	1	X					
4522-115				1	1	X					
4522-116				1	1	X					
4522-117				1	1	X					
4522-234FB				1	1	X					Trip Blank

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

9-3-09

Not Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
___ PIECE(S) CONSISTING OF ___ BOX(ES)	X COMMERCIAL CARRIER: UPS
1 ICE CHEST(S): OTHER ___	___ COURIER
	___ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY (SAMPLER) [signature] X SEALED / UNSEALED	9-3-09	1730	SEALED / UNSEALED	
RELINQUISHED BY SEALED / UNSEALED			SEALED / UNSEALED	
RELINQUISHED BY SEALED / UNSEALED			SEALED / UNSEALED	

7-EPA-9262(Revised 5/85)

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	BZA72Z02/Garvey OU-2	3 / 09 / 09	1 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER BZ	CUBITAINER	BOTTLE	BOTTLE	VOA set 4 ~~BOTTLE~~ VOA	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
~~47~~ 4522-47				1	1	X					
4522-48				1	1	X					
4522-49				1	1	X					
4522-50				1	1	X					
4522-51				1	1	X					
4522-52				1	1	X					
4522-52-FD				1	1	X					Field Duplicate
4522-54				1	1	X					
4522-55				1	1	X					
4522-235-FB				1	1	X					Field Blank
4522-236-FB				1	1	X					Field Blank
4522-56				1	1	X					
4522-57				1	1	X					
4522-58				3	3	X					Extra volume for MS/MSD
4522-59				1	1	X					
4522-60				1	1	X					
4522-61				1	1	X					
4522-62				1	1	X					
4522-62-FD				1	1	X					Field Duplicate
4522-64				1	1	X					
4522-65				1	1	X					
4522-66				1	1	X					
											3-8-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
X ICE CHEST(S): OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☒			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

9-8 9-8

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	BZA72Z02	07 DAY 09 MONTH 09 YEAR	2 of 3

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 vials w/ BOTTLE ECD	VOA SET (~~2~~ 4 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4522-67				1	1	X					
4522-68				1	1	X					
4522-69				1	1	X					
4522-69FD				1	1	X					
4522-71				1	1	X					
4522-72				1	1	X					

9-07-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☒ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
BRIAN ZURBUCHEN	BZA72Z02	3,4,6 (DAY) SEPT (MONTH) 09 (YEAR)	3 of 3

9-8 9-2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	2 VIALS pre-served BOTTLE ECD W	VOA SET (2 VIALS EA) 4	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4522-122				1	1	X					
4522-123				1	1	X					
4522-124				1	1	X					
4522-125				1	1	X					
4522-126				3	3	X					Extra volume collected for MS/MSD
4522-127				1	1	X					
4522-128				1	1	X					
4522-129				1	1	X					
4522-130				1	1	X					
4522-131				1	1	X					
4522-131FD				1	1	X					
4522-133				1	1	X					
4522-134				1	1	X					
4522-135				1	1	X					
4522-136				1	1	X					
4522-137				1	1	X					

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

ASR is Complete

9-8-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☒			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	Proj. ID BZA72Z01	DAY 13-16 MONTH 12 YEAR 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	4 VOA set BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
#4734-1		3			3	X					Extra volume for MS/MS.
-31-FB		1			1	X					Trip blank
-2		1			1	X					
-3		1			1	X					
-4		1			1	X					
-5		1			1	X					

TYPE OF CONTAINERS — NUMBERS OF CONTAINERS PER SAMPLE NUMBER; SAMPLED MEDIA

Frank R. Mar[illegible] 12-16-09
Not Complete

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

1 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

____ COURIER

____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	Proj ID BZA72Z01	17 DAY 12 MONTH 09 YEAR	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	4 VOA Set BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
#4734-32-FB		1			1	X					Trip Blank
-6		1			1	X					
-6-FD		1			1	X					Field Duplicate
-8		1			1	X					
-9		1			1	X					
-10		1			1	X					
-11		1			1	X					
-12		1			1	X					
-13		1			1	X					

Not Complete

[signature]

12-17-09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
1 ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☒ SEALED UNSEALED ☐	12-17-09	1730	☐ SEALED UNSEALED ☐	
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION	SHEET
Brian Zurbuchen	Proj ID BZA72Z01	18 DAY 12 MONTH 09 YEAR	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	4 VOA set BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
#4734-33-FB		1			1	X					Trip Blank
-14		1			1	X					
-15		1			1	X					
-16		1			1	X					
-17		1			1	X					
-17-FD		1			1	X					Field Duplicate
-~~18~~ 19		1			1	X					
CM 12/18/09											

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

Completed ASR #4734
Frank R. Moss
12/18/09

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
____ ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED 1Z67RY022110000162 (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Frank R. Moss [X] SEALED [ ] UNSEALED	12/21/09	1315	[ ] SEALED [ ] UNSEALED	
RELINQUISHED BY [ ] SEALED [ ] UNSEALED	DATE	TIME	RECEIVED BY [ ] SEALED [ ] UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY [ ] SEALED [ ] UNSEALED	DATE	TIME	RECEIVED BY [ ] SEALED [ ] UNSEALED	REASON FOR CHANGE OF CUSTODY

*U.S. GPO: 2002-756-917/40053

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

21 12/21/09

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Proj. ID BZA72Z01	~~19-20~~ / 12 / 09	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	4 VOA set BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
#4735-31-FB		1			1	X					Trip blank
-1		3			3	X					Extra Volume for MS/MSD
-2		1			1	X					
-3		1			1	X					
-4		1			1	X					
-4-FD		1			1	X					Field Duplicate
-6		1			1	X					
-7		1			1	X					
-8		1			1	X					Rinsate Blank
-9		1			1	X					
-10		1			1	X					
-10-FD		1			1	X					Field Duplicate
-12		1			1	X					
-13		1			1	X					
-14		1			1	X					

(NUMBERS OF CONTAINERS PER SAMPLE NUMBER)

Completed ASR #4735
Frank R. Moor
12/21/09

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

____ COURIER

____ SAMPLER CONVEYED

1Z67RY022110000153
(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Frank R. Moor [X] SEALED [ ] UNSEALED	12/21/09	1315	[ ] SEALED [ ] UNSEALED	
RELINQUISHED BY [ ] SEALED [ ] UNSEALED	DATE	TIME	RECEIVED BY [ ] SEALED [ ] UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY [ ] SEALED [ ] UNSEALED	DATE	TIME	RECEIVED BY [ ] SEALED [ ] UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER (Print): Brian Zurbuchen

NAME OF SURVEY OR ACTIVITY: Garvey Elevator

DATE OF COLLECTION: 5-16 (DAY) 06 (MONTH) 10 (YEAR)

SHEET 1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	1-L CUBITAINER	1-L Amber BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4931-10					2	X					
4931-11					2	X					
4931-12					2	X					
4931-1	3	1			3	X					
4931-2	3	1			3	X					
4931-3	3	1			3	X					
4931-40-FB					2	X					

ASR Not Complete Alletchie 6/16/10

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

2 ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

X COMMERCIAL CARRIER: UPS

____ COURIER

____ SAMPLER CONVEYED

(SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☒ SEALED ☐ UNSEALED	6-16-10	1800	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER (Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Garvey Elevator	16-17 / 06 / 10	1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA) 4	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4931-13					1	X					
4931-14					1	X					
4931-15					1	X					
4931-16					3	X					Extra Volume for MS/MSD
4931-17					1	X					
4931-18					1	X					
4931-19					1	X					
4931-41B					1	X					

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED UNSEALED ☐			☐ SEALED UNSEALED ☐	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print): Brian Zurbuchen

NAME OF SURVEY OR ACTIVITY: Garvey Elevator

DATE OF COLLECTION: DAY 17-18-19 20 MONTH 06 YEAR 10

SHEET 1 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	1-L CUBITAINER	1-L Amber BOTTLE	BOTTLE	VOAs-4 vials BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4931-20				1		X					
4931-21				1		X					
4931-22				1		X					
4931-4	3	1		1	1	X					
4931-23				1		X					
4931-24				1		X					
4931-24-FD				1		X					
4931-26				1		X					
4931-27				1		X					
4931-28				1		X					
4931-5	3			1	1	X					
4931-6	3	1		1	1	X					
4931-6FD	3	1		1	1	X					
4931-8	3	1		1	1	X					Extra Volume for VOC, MEE + TOC for MS/MSD
4931-29				1		X					
4931-42-FB				1		X					
4931-9	3			1	1	X					
4931-30				1		X					
4931-30 FD				1		X					
4931-31				1		X					
4931-32				1		X					
4931-34				1		X					
4931-34FD				1		X					
4931-36				1		X					

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

DESCRIPTION OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

X ICE CHEST(S): OTHER ____

MODE OF SHIPMENT

____ COMMERCIAL CARRIER: ____

____ COURIER

X SAMPLER CONVEYED

____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY (SAMPLER): [signature] ☐ SEALED ☒ UNSEALED	6-21-10	1300	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Zurbuchen	Garvey Elevator	20 / 06 / 10	2 of 2

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	VOAs-4 vials BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4931-37				1		X					
4931-38				1		X					
4931-39				1		X					

ASR is Complete

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
X ICE CHEST(S); OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED ☒ UNSEALED	6-21-10	1300	☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER (Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Zurbuchen, Brian	Garvey Grain Elevator	16 / 06 / 10	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	~~BOTTLE~~ Amber BOTTLE	BOTTLE	VOA 2 ~~BOTTLE~~	VOA SET (~~2~~ 4 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4932-1	3	1		1	1	X					M/E/E Samples w/HCl
4932-R	3			1	1	X					M/E/E Samples w/HCl
4932-2	3	1		1	1	X					
4932-19					1	X					
4932-13	3			1	1	X					
4932-20					1	X					
4932-20 FD					1	X					
~~4932-3~~	~~3~~	~~1~~		~~1~~	~~1~~	~~X~~					
~~4932-3FD~~	~~3~~	~~1~~			~~1~~	~~X~~					~~MNA~~
4932-46-TB					1	X					Trip Blank

WM 6/16/10

ASR Not Complete

6/16/10

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
X ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED ☒	6/16/10	1625	☐ SEALED UNSEALED ☐	
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER (Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Zurbuchen, Brian	Garvey Elevator	17 / 06 / 10	1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	1 Amber BOTTLE	BOTTLE	4 VOA ~~BOTTLE~~	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
4932-3	3	1		1	1	X					
4932-3FD	3	1			1	X					NO VOC's in FD Sample
4932-5	3	1		1	1	X					
4932-5FD				1		X					
4932-6				1		X					VOC's only
4932-7	3	2		~~3~~ 4	1 ~~3~~ 2	X					Extra Vol for MS/MSD
4932-47TB				1 6/17/10	WM						Trip Blank

Not Complete

6/17/10

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	X COMMERCIAL CARRIER: UPS
X ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED X	6/17/10	1610	☐ SEALED UNSEALED ☐	
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Zurbuchen, Brian	Garvey Elevator Site	~~17~~ 18/19 / 06 / 10	1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	~~BOTTLE~~ Amber BOTTLE	BOTTLE	4 VOA ~~BOTTLE~~	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
4932-8	3	1		1	1	X					
4932-9	3	1		1	1	X					
4932-9FD	3	1			1	X					
4932-14	3	~~1~~ WN 6/19/10		1	1	X					
4932-15	3			1	1	X					
4932-16	3			1	1	X					
4932-17	3			1	1	X					
4932-11	3			1	1	X					
4932-18	3	1		1	1	X					
4932-21				1		X					
4932-21FD				1		X					
4932-23				1		X					
4932-24				1		X					
4932-25				1		X					
4932-26				1		X					
4932-27				1		X					
4932-28				1		X					

NUMBERS OF CONTAINERS PER SAMPLE NUMBER

[signature] 6/21/10

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S); OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] ☐ SEALED UNSEALED ☒	6/22/10		☐ SEALED UNSEALED ☐	
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED UNSEALED ☐	DATE	TIME	RECEIVED BY ☐ SEALED UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER (Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Zurbucken, Brian	Garvey Elevator	21 / 06 / 10	1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER				4						
4932-34					1	X					
4932-35					1	X					
4932-48FB					1	X					Trip Blank
4932-36					1	X					
4932-37					1	X					
4932-29					1	X					
4932-30					1	X					
4932-31					1	X					
4932-32					1	X					
4932-33					1	X					
4932-38					1	X					
4932-39					1	X					

ASR Complete
[signature] 6/21/10

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	~~X~~ AF 6/21/10 COMMERCIAL CARRIER: ~~UPS~~ AF 6/21/10
X ICE CHEST(S); OTHER ____	____ COURIER
	X SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☒	6/21/10		SEALED ☐ UNSEALED ☐	
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

CHEMSOLUTIONS CHAIN OF CUSTODY FORMS

Chain of Custody

CHEMSOLUTIONS

9606 S. Spruce Mountain Rd. Phone: 303-771-5570
Larkspur, CO 80118 Fax: 303-771-5574
E-mail: john@chemmobile.com

Client Name & Address: Hydrogeologic, Inc. 6340 Glenwood, Suite 200 Overland Park, KS 66202	Client Project Name & Location:	ChemSolutions Project #:
Contact Person: Alan Ritthaus		Location Received:
Phone #: (913) 317-8860		Custody Seals:
FAX #: (913) 317-8868	Client Project Number: EPA7033.01	Date/Time Refrigerated:
E-mail: aritthaus@hgl.com	Invoice to: Alan Ritthaus	Temp:

Sample ID	Date Sampled	Time Sampled	Matrix	# of Containers	Requested Analysis: Select List VOAs					Remarks
T54-03:169-173	12/21/09	1000	Water	2	X					#4735-9
T54-03:159-163	↓	1030	↓	↓	↓					#4735-10
T54-03:359-363	↓	—	↓	↓	↓					—
T54-03:149-153	↓	1100	↓	↓	↓					#4735-12
T54-03:138-142	↓	1120	↓	↓	↓					#4735-13
T54-03:124-128	↓	1145	↓	↓	↓					#4735-14

Sampled and Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	12/21/09	1305	[signature]	12/21/09	1305
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Chain of Custody

CHEMSOLUTIONS

9606 S. Spruce Mountain Rd.
Larkspur, CO 80118
E-mail: john@chemmobile.com
Phone: 303-771-5570
Fax: 303-771-5574

Client Name & Address: Hydrogeologic, Inc. 6340 Glenwood, Suite 200 Overland Park, KS 66202 Contact Person: Alan Rittgers	Client Project Name & Location: Garvey Elevator Hastings, NE	ChemSolutions Project #: Location Received: Custody Seals:
Phone #: (913) 317-8860		
FAX #: (913) 317-8868	Client Project Number: EP9033.01	Date/Time Refrigerated:
E-mail: arittgers@hgl.com	Invoice to: Alan Rittgers	Temp:

Sample ID	Date Sampled	Time Sampled	Matrix	# of Containers	Select List VOCs					Remarks
734-01:214-218	12/20/09	1045	Water	3	X					#4735-1
734-01:204-208		1120								#4735-2
734-01:194-198		1140								#4735-3
734-01:184-188		1205								#4735-4
734-01:384-388		—								—
734-01:174-178		1250								#4735-6
734-01:164-168		1320								#4735-7
HydroPunch™ Rinsate Blank	12/20/09	1430	Water	3	X					#4735-8

Sampled and Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	12-20-09	1450	[signature]	12/20/09	1450
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Chain of Custody

CHEMSOLUTIONS

9606 S. Spruce Mountain Rd.
Larkspur, CO 80118
E-mail: john@chemmobile.com

Phone: 303-771-5570
Fax: 303-771-5574

Client Name & Address:	Client Project Name & Location:	ChemSolutions Project #:
Hydrogeologic, Inc. 6340 Glenwood, Suite 200 Overland Park, KS 66202	Garvey Elevator Hastings, NE	Location Received:
Contact Person: Alan Rittgers		Custody Seals:
Phone #: (913) 317-8860		
FAX #: (913) 317-8868	Client Project Number: EP7033.01	Date/Time Refrigerated:
E-mail: arittgers@hgl.com	Invoice to: Alan Rittgers	Temp:

Sample ID	Date Sampled	Time Sampled	Matrix	40 ml VOA # of Containers	Requested Analysis: ~~Carbon Tetrachloride~~	~~Chloroform~~	~~Carbon Disulfide~~	~~EDB~~	Select List VOC	Remarks
SB39: 136-140	12/18/09	10:00	Water	3					X	#4734-14
SB37: 125-129	12/18/09	13:25	Water	3					X	#4734-15
SB37: 120-124	12/18/09	14:20	Water	3					X	#4734-16
SB40: 125-129	12/18/09	16:15	Water	3					X	#4734-17
SB40: ~~135-139~~ 325-329	12/18/09	—	Water	3					X	—
SB 40: 120-124	12/18/09	17:00	Water	3					X	#4734-19

Sampled and Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	12/18/09	1720	[signature]	12/18/09	1720
Relinquished by:	**Date:**	**Time:**	**Received by:**	**Date:**	**Time:**
Relinquished by:	**Date:**	**Time:**	**Received by:**	**Date:**	**Time:**

Chain of Custody

CHEMSOLUTIONS

9606 S. Spruce Mountain Rd.
Larkspur, CO 80118
E-mail: john@chemmobile.com
Phone: 303-771-5570
Fax: 303-771-5574

Client Name & Address: HYDROGEOLOGIC, INC. 6340 GLENWOOD, SUITE 200 OVERLAND PARK, KS 66202	Client Project Name & Location: GARVEY ELEVATOR HASTINGS, NE	ChemSolutions Project #:
Contact Person: ALAN RITTGERS		Location Received:
Phone #: 913-317-8860		Custody Seals:
FAX #: 913-317-8868	Client Project Number: EP9033.01.	Date/Time Refrigerated:
E-mail: ARITTGERS@HGL.COM	Invoice to: ALAN RITTGERS	Temp:

Sample ID	Date Sampled	Time Sampled	Matrix	40 ml VOA # of Containers	Carbon Tetrachloride	Chloroform	Carbon Disulfide	EDB		Remarks
SB33: 146-150	12/17/09	09:50	Water	3	X	X	X	X		#4734-6
SB33: 140-144	↓		↓	↓	↓	↓	↓	↓		#4734-8
SB33: 134-138	↓		↓	↓	↓	↓	↓	↓		#4734-9
SB33: 129-133	↓		↓	↓	↓	↓	↓	↓		#4734-10

Sampled and Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	12/17/09	11:45	[signature]	12/17/09	1145
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Chain of Custody

CHEMSOLUTIONS

9606 S. Spruce Mountain Rd. Phone: 303-771-5570
Larkspur, CO 80118 Fax: 303-771-5574
E-mail: john@chemmobile.com

Client Name & Address: Hydrogeologic, Inc. 6340 Glenwood, Suite 200 Overland Park, KS 66202 Contact Person: Alan Rittgers	Client Project Name & Location: Garvey Elevator Hastings, NE	ChemSolutions Project #:
Phone #: 913-317-8860		Location Received:
FAX #: 913-317-8868	Client Project Number: EP9033.01.	Custody Seals:
E-mail: arittgers@hgl.com	Invoice to: Alan Rittgers	Date/Time Refrigerated: Temp:

Sample ID	Date Sampled	Time Sampled	Matrix	40 mL VOA vials # of Containers	Requested Analysis: Carbon Tetrachloride	Chloroform	Carbon Disulfide	EDB		Remarks
SB38:138-142	12/17/09	1520	Water	3	X	X	X	X		#4734-11
SB38:130-134	↓	1550	↓	↓	↓	↓	↓	↓		#4734-12
SB38:124-128	↓	1605	↓	↓	↓	↓	↓	↓		#4734-13

Sampled and Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	12/17/09	1645	[signature]	12/17/09	1645
Relinquished by:	**Date:**	**Time:**	**Received by:**	**Date:**	**Time:**
Relinquished by:	**Date:**	**Time:**	**Received by:**	**Date:**	**Time:**

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CARUS CHAIN OF CUSTODY FORMS

CARUS®

CHAIN OF CUSTODY RECORD

*ITEMS LISTED IN RED MUST BE COMPLETED BY CLIENT

CLIENT*: HydroGeoLogic, Inc	Garvey Elevator Hastings, NE		P.O. NUMBER: 2009-08353	(FOR LAB USE ONLY)
ADDRESS: 6340 Glenwood, Ste. 200, Bldng 7	PHONE NUMBER: 913-317-8860	FAX NUMBER	DATE SHIPPED	TECH # 11232
CITY STATE ZIP: Overland Park, KS 66202	SAMPLER (PLEASE PRINT): Jeff Gadt		REMOX® ISCO REAGENT: ☒ SOLID 4/16 ☐ LIQUID ☐ EITHER	LOGGED BY: SOD
PROJECT MANAGER: Alan Rittgers	SAMPLER'S SIGNATURE: [signature]			

SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE SOIL	SAMPLE TYPE GW	SOIL TYPE	# OF CONT	PNOD Soil Demand ASTM D7262-07						REMARKS
MW-46DZ: 192'-196'	4/16/10	0840	X		Sand		X						
MW-41DZ: 154'-158'	4/18/10	1320	X		sand		X						
MW-45D: 156'-160'	4/30/10	1415	X		Sand		X						
MW-12D: 172-176	5/3/10	1040	X		Sand		X						

Not complete
[signature] 5-5-10

TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH IS SUBJECT TO CARUS CORPORATION APPROVAL): NORMAL RUSH

ADDITIONAL COMMENTS:

SEND RESULTS TO:

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	DATE / TIME	COMMENTS: (FOR LAB USE ONLY)
[signature]	5-5-10 / 0900	Beth Vlastuk	5-6-10 / 10 AM	
RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED AT LAB BY: (SIGNATURE)	DATE / TIME	SAMPLE(S) RECEIVED ON ICE Y OR N BOTTLES RECEIVED IN GOOD CONDITION Y OR N BOTTLES FILLED WITH ADEQUATE VOLUME Y OR N SAMPLES RECEIVED WITHIN HOLD TIME(S) Y OR N

Ship samples to: Carus Corporation, 1500 8th Street, Bldg 45 – Customer Service Lab, LaSalle, IL 61301

CARUS®

CHAIN OF CUSTODY RECORD

*ITEMS LISTED IN RED MUST BE COMPLETED BY CLIENT

CLIENT*: HydroGeoLogic, Inc	PROJECT NAME: Garvey Elevator	SITE LOCATION: Hastings, NE	P.O. NUMBER: 2009-00353	ANALYSIS REQUESTED
ADDRESS: 6340 Glenwood, Ste 200, Bldg 7	PHONE NUMBER: 913-317-8860	FAX NUMBER:	DATE SHIPPED:	PNOD Soil Demand ASTM D7262-07
CITY STATE ZIP: Overland Park, KS 66202	SAMPLER (PLEASE PRINT): Jeff Gadt		REMOX® ISCO REAGENT: ☐ SOLID ☐ LIQUID ☐ EITHER	
PROJECT MANAGER: Alan Rittger	SAMPLER'S SIGNATURE: [signature]			

(FOR LAB USE ONLY)
TECH # 11238
LOGGED BY: B Vlastnik

SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE SOIL	SAMPLE TYPE GW	SOIL TYPE	# OF CONT	PNOD Soil Demand ASTM D7262-07						REMARKS
MW-42E: 147'-151'	5-12-10	0900	X		Sand		X						
MW-44E: 187'-191'	5-15-10	1245	X		Sand		X						

TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH IS SUBJECT TO CARUS CORPORATION APPROVAL) NORMAL RUSH

ADDITIONAL COMMENTS:

SEND RESULTS TO:

RELINQUISHED BY: (SIGNATURE)	DATE / TIME	RECEIVED BY: (SIGNATURE)	DATE / TIME	COMMENTS: (FOR LAB USE ONLY)
[signature]	DATE 5-19-10 TIME 0830	Beth Vlastnik	DATE 5/20/10 TIME 1:30pm	
RELINQUISHED BY: (SIGNATURE)	DATE TIME	RECEIVED AT LAB BY: (SIGNATURE)	DATE TIME	SAMPLE(S) RECEIVED ON ICE Y OR N BOTTLES RECEIVED IN GOOD CONDITION Y OR N BOTTLES FILLED WITH ADEQUATE VOLUME Y OR N SAMPLES RECEIVED WITHIN HOLD TIME(S) Y OR N

Ship samples to: Carus Corporation, 1500 8th Street, Bldg 45 – Customer Service Lab, LaSalle, IL 61301

ALPHA-OMEGA GEOTECH CHAIN OF CUSTODY FORMS

CHAIN OF CUSTODY RECORD

HGL
1155 Herndon Parkway
Suite 900
Herndon, VA 20170

Client: HydroGeoLogic, Inc.
Project Name/No.: Garvey Elevator Site
Project Manager: Alan Rittgers
Sampler: Jeff Gaut/Mark Peters
Phone: (913) 317-8860 Fax: (913) 317-8868

SAMPLE IDENTIFICATION	DATE COLL.	TIME COLL.	GRAB	COMPOSITE	SOIL	WATER	OTHER	TOTAL NO. OF CONTAINERS	ASTM D422 & 423	ASTM D 5084-92	ASTM D2937	ASTM D2434-68 or D5084 (?)					REMARKS OR SAMPLE LOCATION
MW-41D2 199'-203'	4-18-10	1620	X		X			1	X	X	X	X					(?) If enough volume; HGL realizes this may not be possible given the volumes provided
MW-43E 183'-187'	4-27-10	1625	X		X			1	X	X	X	X					
MW-45D 141'-145'	4-30-10	1300	X		X			1	X	X	X	X					
MW-45D 164'-168'	4-30-10	1510	X		X			1	X	X	X	X					
MW-12D 168'-172'	5-3-10	0955	X		X			1	X	X	X	X					
MW-42E 197'-201'	5-12-10	1230	X		X			1	X	X	X	X					
MW-42E 208'-212'	5-12-10	1400	X		X			1	X	X	X	X					
MW-44E 203'-207'	5-15-10	1435	X		X			1	X	X	X	X					

APPLICABLE REGULATION
- RCRA
- ECRA
- CERCLA
- NPDES
- CWA
- SDWA
- OTHER

Special Instructions

Possible Hazard Identification
- Non-Hazard
- Flammable
- Skin Irritant
- Poison B
- Unknown

Sample Disposal
- Return to Client
- Disposal by Lab
- Archive for ________ Months

Turn Around Time Required
- Normal
- Rush

QC Level
- I.
- II.
- III.

Project Specific (specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	5/19/10	1430	1. Received by [signature]	5/19/2010	14:30
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		

Comments

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APPENDIX R

LABORATORY ANALYTICAL RESULT TABLES

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Notes for Appendix R
Tabulated Analytical Results
Garvey Elevator Superfund Site
Hastings, NE

Bolded results indicate a detection.

Shaded results indicate that the reported value is greater than the PRG.

[1] Soil PRGs are from the EPA Regional Screening Levels for chemical contaminants at Superfund Sites, November 2010.

The PRG shown is the most conservative based on the RSLs for Residential Soil or the Protection of Groundwater (Risk-based or MCL-based).

The Risk-based soil screening level (SSL) DAF=20 is shown unless otherwise indicated.

[2] Protection of Groundwater, MCL-based SSL, DAF=20.

[3] Residential Soil SSL.

[4] Groundwater PRGs are EPA Maximum Contaminant Levels (MCLs) unless otherwise noted.

[5] EPA Regional Screening Levels for Tapwater.

[6] MCL, Nebraska Ground Water Quality and Use Classification, Title 118, March 2006 (NDEQ, 2006a).

[7] Shallow Gas Concentration Corresponding to indoor Air Concentrations taken from OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. (Subsurface Vapor Intrusion Guidance, November 2002 (USEPA, 2002a)), Table 2c 10-6 Risk Level).

[8] PRGs are from the EPA Regional Screening Levels for chemical contaminants at Superfund Sites, May 2010, Industrial Air.

* Sample was collected for EPA laboratory anlysis; there is no mobile laboratory Lab ID.

DBCP - 1,2-dibromo-3-chloropropane

EDB - 1,2-dibromoethane

ft bgs - feet below ground surface

FD - field duplicate

ID - identification

J - The identification of the analyte is acceptable. The reported value is an estimate.

$\mu g/m^3$ - micrograms per cubic meter

$\mu g/L$ - micrograms per liter

mg/L - milligrams per liter

$\mu g/kg$ - microgram per kilogram

mg/kg - milligram per kilogram

NA - not analyzed

N/A - not applicable

NE - not established

PCBs - polychlorinated biphenyls

PRGs - Preliminary Remediation Goal

U - The analyte was not detected at or above the reporting limit.

UAA - Use Attainability Analysis

UJ - The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

R - The data was rejected because of a quality control issue.

SVOCs - semivolatile organic compounds

VOCs - volatile organic compounds

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Table R5.4
Analytical Results - Drainageway Sediments
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID		**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Date		**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
VOCs (μg/kg)	**PRGs[1]**											
1,1,1-Trichloroethane	1,400 [2]	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2,2-Tetrachloroethane	0.52	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2-Trichloroethane	1.56	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2-Trichlorotrifluoroethane	3,000,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1-Dichloroethane	13.8	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1-Dichloroethene	50 [2]	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2,3-Trichlorobenzene	1,740	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 UJ
1,2,4-Trichlorobenzene	136	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 UJ
1,2-Dibromo-3-Chloropropane	0.0028	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dibromoethane	0.036	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichlorobenzene	7,200	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichloroethane	0.84	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichloropropane	2.6	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,3-Dichlorobenzene	NE	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,4-Dichlorobenzene	8.2	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
2-Butanone	30,000	**27**	**17**	**13**	12 U	**23**	**12**	**24**	**24**	**30**	**23**	**33**
2-Hexanone	220	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
4-Methyl-2-Pentanone	9,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Acetone	90,000	**520 J**	**260 J**	**100 J**	12 UJ	**430 J**	**170 J**	**350 J**	**330 J**	**320 J**	**210 J**	**360 J**
Benzene	4.2	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromodichloromethane	0.64	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromoform	46	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromomethane	44	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Carbon Disulfide	6,200	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Carbon Tetrachloride	3.4	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chlorobenzene	1,240	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloroethane	118,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloroform	1.06	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloromethane	980	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U

Table R5.4
Analytical Results - Drainageway Sediments
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID		4525-10	4525-11	4525-1	4525-8	4525-9	4525-2	4525-3	4525-3FD	4525-5	4525-6	4525-7
Sample Collection Date		8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010
cis-1,2-Dichloroethene	420 (2)	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
cis-1,3-Dichloropropene	NE	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Cyclohexane	260,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Dibromochloromethane	0.78	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Dichlorodifluoromethane	12,200	8.9 UJ	6.1 UJ	5.9 UJ	5.9 UJ	7.4 UJ	6.1 UJ	6.7 UJ	6.1 UJ	8.5 UJ	7.4 UJ	9.1 UJ
Ethyl Benzene	34	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Isopropylbenzene	22,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
m and/or p-Xylene	4,000	18 U	12 U	12 U	12 U	15 U	12 U	13 U	12 U	17 U	15 U	18 U
Methyl Acetate	150,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methyl tert-butyl ether	56	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methylcyclohexane	NE	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methylene Chloride	24	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Naphthalene	9.4	18 U	12 U	12 U	12 U	15 U	12 U	13 U	12 U	17 U	15 U	18 U
o-Xylene	24,000	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Styrene	2,200 (2)	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Tetrachloroethene	0.98	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Toluene	13,800 (2)	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	**37**	6.1 U	8.5 U	7.4 U	9.1 U
trans-1,2-Dichloroethene	580 (2)	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
trans-1,3-Dichloropropene	NE	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Trichloroethene	14.4	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Trichlorofluoromethane	16,600	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Vinyl Chloride	0.112	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
SVOCs (μg/kg)	**PRGs(1)**											
1,2,4-Trichlorobenzene	136	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
1,2-Dichlorobenzene	7,200	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
1,3-Dichlorobenzene	NE	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
1,4-Dichlorobenzene	8.2	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2,4,5-Trichlorophenol	280,000	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4,6-Trichlorophenol	460	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4-Dichlorophenol	2,600	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ

Table R5.4
Analytical Results - Drainageway Sediments
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID		**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Date		**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
2,4-Dimethylphenol	17,200	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
2,4-Dinitrophenol	1,640	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
2,4-Dinitrotoluene	5.8	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
2,6-Dinitrotoluene	1,000	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Chloronaphthalene	300,000	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Chlorophenol	3,000	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2-Methylnaphthalene	15,000	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Methylphenol	30,000	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2-Nitroaniline	3,000	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
2-Nitrophenol	NE	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
3,3'-Dichlorobenzidine	20	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
3-Nitroaniline	NE	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
4,6-Dinitro-2-methylphenol	100	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
4-Bromophenyl-phenylether	NE	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
4-Chloro-3-methylphenol	NE	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
4-Chloroaniline	2.8	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
4-Chlorophenyl-phenylether	NE	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
4-Methylphenol	3,000	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
4-Nitroaniline	28	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
4-Nitrophenol	NE	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
Acenaphthene	440,000	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Acenaphthylene	NE	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Anthracene	7,200,000	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzo(a)anthracene	150 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzo(a)pyrene	15 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(b)fluoranthene	150 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(g,h,i)perylene	NE	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Benzo(k)fluoranthene	1,500 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzoic acid	680,000	**590 J**	500 UJ	990 UJ	970 U	460 UJ	450 UJ	440 UJ	440 UJ	1900 U	940 U	930 U
Benzyl alcohol	17,800	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ

Table R5.4
Analytical Results - Drainageway Sediments
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID		4525-10	4525-11	4525-1	4525-8	4525-9	4525-2	4525-3	4525-3FD	4525-5	4525-6	4525-7
Sample Collection Date		8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010
bis(2-Chloroethoxy)methane	500	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
bis(2-Chloroethyl)ether	0.062	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
bis(2-Chloroisopropyl)ether	2.4	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
bis(2-Ethylhexyl)phthalate	22,000	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Butylbenzylphthalate	10,200	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Carbazole	NE	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Chrysene	15,000 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Dibenz(a,h)anthracene	15 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Dibenzofuran	13,600	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Diethylphthalate	240,000	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Dimethylphthalate	NE	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Di-n-butylphthalate	184,000	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Di-n-octylphthalate	NE	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Fluoranthene	2,300,000 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Fluorene	540,000	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Hexachlorobenzene	10.6	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachlorobutadiene	34	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachlorocyclopentadiene	3,200 (2)	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachloroethane	58	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Indeno(1,2,3-cd)pyrene	150 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Isophorone	460	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Naphthalene	9.4	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Nitrobenzene	1.58	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
N-nitroso-di-n-propylamine	0.144	250 UJ	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
N-nitrosodiphenylamine	1,500	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pentachlorophenol	34	250 UJ	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
Phenanthrene	NE	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Phenol	126,000	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Pyrene	1,700,000 (3)	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U

Table R5.4
Analytical Results - Drainageway Sediments
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID		**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Date		**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
Pesticides (μg/kg)	**PRGs[1]**											
A-BHC	1.24	0.35 U	0.35 U	0.37 U	0.35 U	0.35 U	0.33 U	0.32 U	0.33 U	0.35 U	0.35 U	0.34 U
Aldrin	13	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	0.69 U	0.7 U	0.68 U
B-BHC	4.4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U
Chlordane, technical	260	23 U	23 U	4.9 U	24 U	23 U	4.4 U	21 U	22 U	23 U	**12 J**	4.5 U
D-BHC	4.4	0.46 U	0.46 U	0.49 U	0.47 U	0.46 U	0.44 U	0.42 U	0.44 U	0.46 U	0.47 U	0.45 U
Dieldrin	3.4	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	**0.84**	**13**	0.68 U
Endosulfan I	60,000	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	0.69 U	0.7 U	0.68 U
Endosulfan II	NE	0.92 U	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	4.5 UJ
Endosulfan Sulfate	NE	4.6 U	4.6 U	0.98 U	4.7 U	4.6 U	0.87 U	4.2 U	4.4 U	4.6 U	9.4 U	0.91 U
Endrin	1,240 (2)	4.6 U	4.6 U	0.98 U	4.7 U	4.6 U	0.87 UJ	4.2 U	4.4 U	4.6 U	9.4 U	0.91 U
Endrin Aldehyde	NE	5.8 U	5.8 U	1.2 U	5.9 U	5.8 U	1.1 U	5.3 U	5.5 U	5.8 U	12 U	1.1 UJ
Endrin Ketone	NE	4.6 U	4.6 U	4.9 U	4.7 U	4.6 U	0.87 UJ	4.2 U	4.4 U	4.6 U	9.4 U	0.91 UJ
G-BHC	7.2	0.46 U	0.46 U	0.49 U	0.47 U	0.46 U	0.44 U	0.42 U	0.44 U	0.46 U	0.47 U	0.45 U
Heptachlor	24	3.5 U	3.5 U	0.73 U	3.5 U	3.5 U	0.65 UJ	3.2 U	3.3 U	3.5 U	7 U	3.4 U
Heptachlor Epoxide	3	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	3.2 U	0.66 U	0.69 U	0.7 U	0.68 U
p,p'-DDD	1,320	0.92 U	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	0.91 U
p,p'-DDE	940	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	**2.1 J**	1.1 U
p,p'-DDT	1,340	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	**2.1 J**	5.7 U
p,p'-Methoxychlor	44,000 (2)	2.3 UJ	2.3 UJ	2.4 UJ	2.4 UJ	2.3 UJ	2.2 UJ	2.1 UJ	2.2 UJ	2.3 UJ	2.3 UJ	11 U
Toxaphene	188	120 U	120 U	120 U	120 U	120 U	110 U	110 U	110 U	120 U	230 U	114 U
UAA Pesticides (μg/kg)	**PRGs[1]**											
Malathion	3,800	4.6 U	4.6 U	4.9 U	4.7 U	4.6 U	4.36 U	4.2 U	4.4 U	4.6 U	4.7 U	4.5 U
Herbicides (μg/kg)	**PRGs[1]**											
2,4,5-T	3,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TP	560 (2)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-D	360 (2)	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U

Table R5.4
Analytical Results - Drainageway Sediments
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID		**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Date		**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
PCBs (μg/kg)	**PRGs[1]**											
Aroclor 1016	1,840	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1221	2.4	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1232	2.4	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1242	106	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1248	104	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1254	176	12 U	12 U	12 U	12 U	12 U	11 U	11 U	11 U	12 U	12 U	11 U
Aroclor 1260	220 [3]	58 U	58 U	61 U	59 U	58 U	54 U	53 U	55 U	58 U	120 U	57 U
Percent Solids												
Percent Solids	N/A	**80.6**	**80.3**	**80.9**	**81.9**	**85.6**	**86.8**	**90**	**90.1**	**83.1**	**84.9**	**85.6**

Table R5.5
Analytical Results - Subslab Soil Gas
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		**SG-1**	**SG-2**	**SG-3**	**SG-4**	**SG-5**	**SG-6**	**SG-7**	**SG-8**	**SG-9**	**SG-10**
EPA Lab ID		**4521-1**	**4521-10**	**4521-2**	**4521-9**	**4521-3**	**4521-4**	**4521-5**	**4521-8**	**4521-6**	**4521-7**
Sample Collection Date		**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**
VOCs (μg/m3)	**PRGs[7]**										
1,1,1-Trichloroethane	22,000	2.7 U	2.7 U	2.7 U	**74.6**	**3.7**	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2,2-Tetrachloroethane	0.42	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
1,1,2-Trichloroethane	1.5	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	300,000	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
1,1-Dichloroethane	5,000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	2,000	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	2,000	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
1,2,4-Trimethylbenzene	60	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane	0.11	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	2,000	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
1,2-Dichloroethane	0.94	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	40	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
1,3,5-Trimethylbenzene	60	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,3-Dichlorobenzene	1,100	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Butanone	NE	**1.5**	1.5 U	**7.8**	**2.4**	**4.3**	**2.4**	**15.5**	**6.2**	**8.5**	**2.8**
2-Hexanone	NE	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	**3.2**	2.1 U	2.1 U	2.1 U
4-Methyl-2-pentanone	NE	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Acetone	3,500	**8.1**	**5.4**	**45.1**	**8.9**	**31.2**	**7.5**	**133**	**27.5**	**45.9**	**18.7**
Benzene	3.1	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	**2.2**	1.6 U
Bromodichloromethane	1.4	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	22	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	NE	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Carbon disulfide	7,000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	**3.2**	**3.3**	1.6 U	1.6 U
Carbon tetrachloride	1.6	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	**3.7**	3.1 U
Chlorobenzene	600	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U

Table R5.5
Analytical Results - Subslab Soil Gas
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	SG-7	SG-8	SG-9	SG-10
EPA Lab ID		**4521-1**	**4521-10**	**4521-2**	**4521-9**	**4521-3**	**4521-4**	**4521-5**	**4521-8**	**4521-6**	**4521-7**
Sample Collection Date		**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**
VOCs (μg/m3)	**PRGs(7)**										
Chloroethane	100,000	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	1.1	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	**6.3**	2.4 U	**93.3**	**46.7**
Chloromethane	NE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	350	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,3-Dichloropropene	NE	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Dibromochloromethane	NE	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
Ethylbenzene	22	2.2 U	2.2 U	**4.2**	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Heptane	NE	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	1.1	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	2,000	1.8 U	**2.9**	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	**2.3**	1.8 U
Isopropylbenzene		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
m,p-Xylene	70,000	2.2 U	2.2 U	**5.6**	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Methylene chloride	52	**2.6**	**17.4**	**7.5**	**3.6**	**2.5**	**3**	**3.1**	**5.9**	**3.6**	**3.9**
Naphthalene	30	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	**5.4**	5.2 U	5.2 U
o-Xylene	70,000	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Styrene	10,000	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Tetrachloroethene	8.1	3.4 U	3.4 U	3.4 U	**36.6**	**420**	**22.8**	**1350**	**6**	**123**	**185**
Toluene	4,000	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	**2.8**	**1.9**	1.9 U
trans-1,2-Dichloroethene	700	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	NE	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Trichloroethene	0.22	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	**39.9**	2.7 U	2.7 U	2.7 U
Vinyl chloride	2.8	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U

Table R5.6
Analytical Results - Indoor and Outdoor Air
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		**IA-1**	**IA-2**	**IA-3**	**IA-3**	**IA-4**	**IA-5**	**IA-6**	**IA-7**	**IA-8**	**IA-9**	**IA-10**	**OA-SE-11**	**OA-SW-17**
EPA Lab ID		**4521-17**	**4521-16**	**4521-15**	**4521-15FD**	**4521-18**	**4521-19**	**4521-20**	**4521-11**	**4521-12**	**4521-13**	**4521-14**	**4521-21**	**4521-22**
Sample Collection Date		**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**
VOCs (μg/m3)	**PRGs(8)**													
1,1,1-Trichloroethane	22,000	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2,2-Tetrachloroethane	0.21	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
1,1,2-Trichloroethane	0.77	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	130,000	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
1,1-Dichloroethane	7.7	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	880	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	8.8	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 UJ	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
1,2,4-Trimethylbenzene	31	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**4.5**	**5.8**	**5.2**	**4.7**	2.5 U	2.5 U
1,2-Dibromoethane	0.02	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	880	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
1,2-Dichloroethane	0.47	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	1.2	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	**2.4**	2.3 U	2.3 U	2.3 U
1,3,5-Trimethylbenzene	NE	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,3-Dichlorobenzene	NE	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
2-Butanone	22,000	**18.3**	**12.4**	**11.3**	**12.4**	**7.6**	**8.5**	**5.3**	1.5 U	1.5 U	**2.5**	**4.1**	**1.5**	**1.8**
2-Hexanone	130	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	**8.1 J**	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
4-Methyl-2-pentanone	13,000	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	**3.1 J**	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Acetone	140,000	**56.5**	**59.6**	**59.2**	**67.2**	**27.4**	**25.3 J**	**33.6**	**27.6**	**28.5**	**27.7**	**35**	**12.2**	**14.3**
Benzene	1.6	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	**6.7**	**8.6**	**7.4**	**7.5**	1.6 U	1.6 U
Bromodichloromethane	0.33	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	11	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	22	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Carbon disulfide	3,100	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Carbon tetrachloride	2	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Chlorobenzene	220	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	44,000	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	0.53	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Chloromethane	390	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	NE	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,3-Dichloropropene	NE	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Dibromochloromethane	0.45	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
Ethylbenzene	4.9	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	**4.2**	**5.3**	**4.7**	**4.5**	2.2 U	2.2 U
Heptane	NE	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	**2.7**	**2.2**	2.1 U	2.1 U
Hexachlorobutadiene	0.56	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	3,100	**2.5**	1.8 U	1.8 U	1.8 U	**3.7**	1.8 U	1.8 U	**7.7**	**8.8**	**7.9**	**7.8**	1.8 U	1.8 U
Isopropylbenzene	1,800	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
m,p-Xylene	440	**4.9**	**3.5**	**4**	**3.5**	2.2 U	**2.3**	2.2 U	**13.1**	**16.4**	**14.5**	**13.8**	2.2 U	2.2 U
Methylene chloride	26	**13.7**	**5.4**	1.7 U	**3.4**	**26**	**3.8**	**4.4**	**32.8**	**34**	**43.3**	**35.5**	**15.8**	**3**
Naphthalene	0.36	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
o-Xylene	3,100	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	**4.4**	**5.5**	**4.9**	**4.7**	2.2 U	2.2 U
Styrene	4,400	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Tetrachloroethene	2.1	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Toluene	22,000	**6.1**	**3.5**	**3.7**	**3.4**	**20.6**	1.9 U	**2**	**23.1**	**28.1**	**23.8**	**24.5**	1.9 U	1.9 U
trans-1,2-Dichloroethene	260	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	NE	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Trichloroethene	6.1	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	**3**	**3.8**	**3.7**	2.7 U	2.7 U
Vinyl chloride	2.8	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 UJ	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U

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Sample Location		**SB-01**	**SB-01**	**SB-01**	**SB-01**	**SB-01**	**SB-01**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-02**	**SB-03**	**SB-03**	**SB-03**	**SB-03**	**SB-03**	**SB-04**	**SB-04**	**SB-04**
EPA Lab ID		**4518-62**	**4518-63**	**4518-64**	**4518-65**	**4518-66**	**4518-**	**4518-138**	**4518-139**	**4518-140**	**4518-141**	**4518-142**	**4518-143**	**4518-144**	**4518-145**	**4518-146**	**4518-147**	**4518-148**	**4518-149**	**4518-68**	**4518-69**	**4518-70**	**4518-71**	**4518-**	**4518-1**	**4518-2**	**4518-3**
Sample Collection Depth (ft bgs)		**0.5-1**	**6-7**	**10.5-11**	**15-16**	**19-20**	**19-20**	**0.5-1**	**7-7.5**	**11-11.5**	**15-16**	**21-22**	**27-28**	**34-35**	**44-45**	**54-55**	**64-65**	**70.5-71**	**81-81.5**	**4-5**	**11.5-12**	**16.5-17**	**19-20**	**19-20**	**3-4**	**10-11**	**16-17**
Sample Collection Date		**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/8/2009**	**8/9/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**
VOCs (μg/kg)	**PRGs[1]**																										
1,1,1-Trichloroethane	1,400 [2]	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,1,2,2-Tetrachloroethane	0.52	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,1,2-Trichloroethane	1.56	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,1,2-Trichlorotrifluoroethane	3,000,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,1-Dichloroethane	13.8	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,1-Dichloroethene	50 [2]	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2,3-Trichlorobenzene	1,740	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2,4-Trichlorobenzene	136	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2-Dibromo-3-Chloropropane	0.0028	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2-Dibromoethane	0.036	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2-Dichlorobenzene	7,200	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2-Dichloroethane	0.84	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,2-Dichloropropane	2.6	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,3-Dichlorobenzene	NE	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
1,4-Dichlorobenzene	8.2	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
2-Butanone	30,000	**15**	**12**	**23**	**20**	**17**	**19**	**10**	**15**	**27**	**19**	**24**	10 U	9.7 U	9.5 U	9.6 U	8.6 U	10 U	11 U	26 U	15 U	13 U	11 U	13 U	15 U	13 U	13 U
2-Hexanone	220	9.8 U	10 U	14 U	11 U	12 U	12 U	9.7 U	11 U	13 U	9.7 U	12 U	10 U	9.7 U	9.5 U	9.6 U	8.6 U	10 U	11 U	26 U	15 U	13 U	11 U	13 U	15 U	13 U	13 U
4-Methyl-2-Pentanone	9,000	9.8 U	10 U	14 U	11 U	12 U	12 U	9.7 U	11 U	13 U	9.7 U	12 U	10 U	9.7 U	9.5 U	9.6 U	8.6 U	10 U	11 U	26 U	15 U	13 U	11 U	13 U	15 U	13 U	13 U
Acetone	90,000	**61**	**62**	**100**	**84**	**67**	**68**	**78**	**84**	**110**	**88**	**85**	**44**	**39**	**22**	**23**	**32**	**15**	**21**	**99**	**31**	**26**	**19**	**15**	15 U	**21**	**19**
Benzene	4.2	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Bromochloromethane	NE	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Bromodichloromethane	0.64	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Bromoform	46	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Bromomethane	44	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Carbon Disulfide	6,200	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Carbon Tetrachloride	3.4	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	**14**	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	**77**	**41**	**73**	**7.7**	**15**	7.5 U	6.4 U	6.7 U
Chlorobenzene	1,240	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Chloroethane	118,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Chloroform	1.06	**13**	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	**7.5**	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	**10**	**11**	**10**	**18**	7.5 U	6.4 U	6.7 U
Chloromethane	980	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
cis-1,2-Dichloroethene	420 [2]	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
cis-1,3-Dichloropropene	NE	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Cyclohexane	260,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Dibromochloromethane	0.78	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Dichlorodifluoromethane	12,200	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Ethyl Benzene	34	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Isopropylbenzene	22,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
m and/or p-Xylene	4,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Methyl Acetate	150,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Methyl tert-butyl ether	56	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Methylcyclohexane	NE	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Methylene Chloride	24	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
o-Xylene	24,000	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Styrene	2,200 [2]	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Tetrachloroethene	0.98	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Toluene	13,800 [2]	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
trans-1,2-Dichloroethene	580 [2]	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
trans-1,3-Dichloropropene	NE	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Trichloroethene	14	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Trichlorofluoromethane	16,600	4.9 U	5.1 U	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U
Vinyl Chloride	0.112	4.9 U	5.1 UJ	7.2 U	5.3 U	6.0 U	5.9 U	4.8 U	5.7 U	6.6 U	4.8 U	6.2 U	5.1 U	4.8 U	4.8 U	4.8 U	4.3 U	5.0 U	5.6 U	13 U	7.5 U	6.6 U	5.5 U	6.4 U	7.5 U	6.4 U	6.7 U

Sample Location		SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-03	SB-03	SB-03	SB-03	SB-03	SB-04	SB-04	SB-04
EPA Lab ID		4518-62	4518-63	4518-64	4518-65	4518-66	4518-	4518-138	4518-139	4518-140	4518-141	4518-142	4518-143	4518-144	4518-145	4518-146	4518-147	4518-148	4518-149	4518-68	4518-69	4518-70	4518-71	4518-	4518-1	4518-2	4518-3
Sample Collection Depth (ft bgs)		0.5-1	6-7	10.5-11	15-16	19-20	19-20	0.5-1	7-7.5	11-11.5	15-16	21-22	27-28	34-35	44-45	54-55	64-65	70.5-71	81-81.5	4-5	11.5-12	16.5-17	19-20	19-20	3-4	10-11	16-17
Sample Collection Date		8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/9/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009
SVOCs (μg/kg)	**PRGs[1]**																										
1,2,4,5-Tetrachlorobenzene	1,020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2,4,5-Trichlorophenol	280,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2,4,6-Trichlorophenol	460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2,4-Dichlorophenol	2,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2,4-Dimethylphenol	17,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2,4-Dinitrophenol	1,640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 U	400 U	420 U
2,4-Dinitrotoluene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2,6-Dinitrotoluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2-Chloronaphthalene	300,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2-Chlorophenol	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2-Methylnaphthalene	15,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2-Methylphenol	30,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
2-Nitroaniline	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 U	400 U	420 U
2-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
3,3'-Dichlorobenzidine	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
3-Nitroaniline	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 U	400 U	420 U
4,6-Dinitro-2-methylphenol	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 U	400 U	420 U
4-Bromophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
4-Chloro-3-methylphenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
4-Chloroaniline	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
4-Chlorophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
4-Methylphenol	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
4-Nitroaniline	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 U	400 U	420 U
4-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 U	400 U	420 U
Acenaphthene	440,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Acenaphthylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Acetophenone	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Anthracene	7,200,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Atrazine	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Benzaldehyde	16,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Benzo(a)anthracene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Benzo(a)pyrene	15 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Benzo(b)fluoranthene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Benzo(g,h,i)perylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Benzo(k)fluoranthene	1,500 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Biphenyl	380,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
bis(2-Chloroethoxy)methane	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
bis(2-Chloroethyl)ether	0.062	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
bis(2-Chloroisopropyl)ether	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
bis(2-Ethylhexyl)phthalate	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Butylbenzylphthalate	10,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Caprolactam	90,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Carbazole	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Chrysene	15,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Dibenz(a,h)anthracene	15 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Dibenzofuran	13,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Diethylphthalate	240,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Dimethylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Di-n-butylphthalate	184,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Di-n-octylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Fluoranthene	2,300,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U

Sample Location		SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-03	SB-03	SB-03	SB-03	SB-03	SB-04	SB-04	SB-04
EPA Lab ID		4518-62	4518-63	4518-64	4518-65	4518-66	4518-	4518-138	4518-139	4518-140	4518-141	4518-142	4518-143	4518-144	4518-145	4518-146	4518-147	4518-148	4518-149	4518-68	4518-69	4518-70	4518-71	4518-	4518-1	4518-2	4518-3
Sample Collection Depth (ft bgs)		0.5-1	6-7	10.5-11	15-16	19-20	19-20	0.5-1	7-7.5	11-11.5	15-16	21-22	27-28	34-35	44-45	54-55	64-65	70.5-71	81-81.5	4-5	11.5-12	16.5-17	19-20	19-20	3-4	10-11	16-17
Sample Collection Date		8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/8/2009	8/9/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009
Fluorene	540,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Hexachlorobenzene	10.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Hexachlorobutadiene	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Hexachlorocyclopentadiene	3,200 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Hexachloroethane	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Indeno(1,2,3-cd)pyrene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Isophorone	460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Naphthalene	9.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 UJ	200 UJ	220 UJ
Nitrobenzene	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
N-nitroso-di-n-propylamine	0.144	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
N-nitrosodiphenylamine	1,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Pentachlorophenol	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410 UJ	400 UJ	420 UJ
Phenanthrene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Phenol	126,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Pyrene	1,700,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
Pesticides (µg/kg)	**PRGs[1]**																										
A-BHC	1.24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
Aldrin	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
B-BHC	4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
cis-Chlordane	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
D-BHC	4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
Dieldrin	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
Endosulfan I	60,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
Endosulfan Sulfate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
Endrin	1,240 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
Endrin Aldehyde	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
Endrin Ketone	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
G-BHC	7.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
Heptachlor	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
Heptachlor Epoxide	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
p,p'-DDD	1320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
p,p'-DDE	940	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
p,p'-DDT	1340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U	4.0 U	4.2 U
p,p'-Methoxychlor	44,000 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21 U	20 U	22 U
Toxaphene	188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	200 U	220 U
trans-Chlordane	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.2 U
UAA Pesticides (µg/kg)	**PRGs[1]**																										
Malathion	3,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.9 U	82.1 U	82.2 U
Herbicides (µg/kg)	**PRGs[1]**																										
2,4,5-T	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.9 U	11.9 U	11.9 U
2,4,5-TP	560 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7 U	9.7 U	9.7 U
2,4-D	360 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.9 U	20 U	20 U
PCBs (µg/kg)	**PRGs[1]**																										
Aroclor 1016	1840	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1221	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1232	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1242	106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1248	104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1254	176	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1260	220 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1262	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U
Aroclor 1268	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41 U	40 U	42 U

Sample Location		**SB-04**	**SB-04**	**SB-05**	**SB-05**	**SB-05**	**SB-06**	**SB-06**	**SB-06**	**SB-06**	**SB-07**	**SB-07**	**SB-07**	**SB-07**	**SB-07**	**SB-08**	**SB-08**	**SB-08**	**SB-08**	**SB-09**	**SB-09**	**SB-09**	**SB-09**	**SB-09**	**SB-10**	**SB-10**	**SB-10**
EPA Lab ID		**4518-4FD**	**4518-4**	**4518-15**	**4518-16**	**4518-17**	**4518-150**	**4518-151**	**4518-152**	**4518-153**	**4518-51**	**4518-52**	**4518-53**	**4518-**	**4518-55**	**4518-129**	**4518-130**	**4518-131**	**4518-132**	**4518-46**	**4518-47**	**4518-48**	**4518-**	**4518-50**	**4518-133**	**4518-134**	**4518-135**
Sample Collection Depth (ft bgs)		**18-20**	**18-20**	**1.3-2.3**	**9-10**	**13.5-14.5**	**4-5**	**9-10**	**14-15**	**19-20**	**1.5-2**	**5-6**	**15-16**	**15-16**	**19-20**	**7.5-8**	**12-12.5**	**14.5-15**	**19.5-20**	**0-1**	**6-7**	**15-16**	**15-16**	**19-20**	**1.5-2**	**7-7.5**	**12-12.5**
Sample Collection Date		**8/4/2009**	**8/4/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/9/2009**	**8/9/2009**	**8/9/2009**	**8/9/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**
VOCs (µg/kg)	**PRGs[1]**																										
1,1,1-Trichloroethane	1,400 [2]	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,1,2,2-Tetrachloroethane	0.52	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,1,2-Trichloroethane	1.56	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,1,2-Trichlorotrifluoroethane	3,000,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,1-Dichloroethane	13.8	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,1-Dichloroethene	50 [2]	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2,3-Trichlorobenzene	1,740	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2,4-Trichlorobenzene	136	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2-Dibromo-3-Chloropropane	0.0028	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2-Dibromoethane	0.036	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2-Dichlorobenzene	7,200	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2-Dichloroethane	0.84	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,2-Dichloropropane	2.6	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,3-Dichlorobenzene	NE	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
1,4-Dichlorobenzene	8.2	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
2-Butanone	30,000	13 U	13 U	10 U	**17**	13 U	11 U	13 U	**13**	12 U	**17**	**17**	14 U	12 U	**19**	**27**	15 U	14 U	12 U	10 U	13 U	12 U	12 U	**17**	**19**	12 U	**15**
2-Hexanone	220	13 U	13 U	10 U	10 U	13 U	11 U	13 U	11 U	12 U	11 U	12 U	14 U	12 U	15 U	15 U	15 U	14 U	12 U	10 U	13 U	12 U	12 U	11 U	12 U	12 U	12 U
4-Methyl-2-Pentanone	9,000	13 U	13 U	10 U	10 U	13 U	11 U	13 U	11 U	12 U	11 U	12 U	14 U	12 U	15 U	15 U	15 U	14 U	12 U	10 U	13 U	12 U	12 U	11 U	12 U	12 U	12 U
Acetone	90,000	**22**	**23**	**17**	**64**	**29**	**44**	**43**	**56**	**35**	**100**	**80**	**44**	**46**	**81**	**130**	**69**	**31**	**44**	**29**	**26**	**40**	**68**	**66**	**90**	**47**	**81**
Benzene	4.2	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Bromochloromethane	NE	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Bromodichloromethane	0.64	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Bromoform	46	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Bromomethane	44	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Carbon Disulfide	6,200	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Carbon Tetrachloride	3.4	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Chlorobenzene	1,240	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Chloroethane	118,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Chloroform	1.06	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Chloromethane	980	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
cis-1,2-Dichloroethene	420 [2]	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
cis-1,3-Dichloropropene	NE	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Cyclohexane	260,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Dibromochloromethane	0.78	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Dichlorodifluoromethane	12,200	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Ethyl Benzene	34	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Isopropylbenzene	22,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
m and/or p-Xylene	4,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Methyl Acetate	150,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Methyl tert-butyl ether	56	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Methylcyclohexane	NE	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Methylene Chloride	24	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
o-Xylene	24,000	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Styrene	2,200 [2]	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Tetrachloroethene	0.98	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Toluene	13,800 [2]	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
trans-1,2-Dichloroethene	580 [2]	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
trans-1,3-Dichloropropene	NE	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Trichloroethene	14	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Trichlorofluoromethane	16,600	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U
Vinyl Chloride	0.112	6.6 U	6.5 U	5.1 U	5.2 U	6.6 U	5.3 U	6.3 U	5.6 U	5.9 U	5.6 U	6.2 U	6.9 U	6.2 U	7.4 U	7.6 U	7.3 U	6.9 U	6.1 U	5.1 U	6.4 U	5.9 U	6.2 U	5.6 U	5.9 U	6.2 U	5.9 U

Sample Location		SB-04	SB-04	SB-05	SB-05	SB-05	SB-06	SB-06	SB-06	SB-06	SB-07	SB-07	SB-07	SB-07	SB-07	SB-08	SB-08	SB-08	SB-08	SB-09	SB-09	SB-09	SB-09	SB-09	SB-10	SB-10	SB-10
EPA Lab ID		4518-4FD	4518-4	4518-15	4518-16	4518-17	4518-150	4518-151	4518-152	4518-153	4518-51	4518-52	4518-53	4518-	4518-55	4518-129	4518-130	4518-131	4518-132	4518-46	4518-47	4518-48	4518-	4518-50	4518-133	4518-134	4518-135
Sample Collection Depth (ft bgs)		18-20	18-20	1.3-2.3	9-10	13.5-14.5	4-5	9-10	14-15	19-20	1.5-2	5-6	15-16	15-16	19-20	7.5-8	12-12.5	14.5-15	19.5-20	0-1	6-7	15-16	15-16	19-20	1.5-2	7-7.5	12-12.5
Sample Collection Date		8/4/2009	8/4/2009	8/5/2009	8/5/2009	8/5/2009	8/9/2009	8/9/2009	8/9/2009	8/9/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/7/2009	8/7/2009	8/7/2009	8/7/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/7/2009	8/7/2009	8/7/2009
SVOCs (µg/kg)	PRGs [1]																										
1,2,4,5-Tetrachlorobenzene	1,020	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	280,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	460	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	2,600	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	17,200	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	1,640	400 U	400 U	400 U	380 U	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	5.8	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	1,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	300,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	3,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	15,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	30,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	3,000	400 U	400 U	400 U	380 U	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	20	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NE	400 U	400 U	400 U	380 U	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	100	400 U	400 U	400 U	380 U	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	2.8	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	3,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	28	400 U	400 U	400 U	380 U	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NE	400 U	400 U	400 U	380 U	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	440,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	22,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	7,200,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	3.8	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	16,200	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	150 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	15 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	150 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1,500 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	380,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	500	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	0.062	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	2.4	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	22,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	10,200	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	90,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	15,000 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	15 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	13,600	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	240,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	184,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,300,000 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		SB-04	SB-04	SB-05	SB-05	SB-05	SB-06	SB-06	SB-06	SB-06	SB-07	SB-07	SB-07	SB-07	SB-07	SB-08	SB-08	SB-08	SB-08	SB-09	SB-09	SB-09	SB-09	SB-09	SB-10	SB-10	SB-10
EPA Lab ID		4518-4FD	4518-4	4518-15	4518-16	4518-17	4518-150	4518-151	4518-152	4518-153	4518-51	4518-52	4518-53	4518-	4518-55	4518-129	4518-130	4518-131	4518-132	4518-46	4518-47	4518-48	4518-	4518-50	4518-133	4518-134	4518-135
Sample Collection Depth (ft bgs)		18-20	18-20	1.3-2.3	9-10	13.5-14.5	4-5	9-10	14-15	19-20	1.5-2	5-6	15-16	15-16	19-20	7.5-8	12-12.5	14.5-15	19.5-20	0-1	6-7	15-16	15-16	19-20	1.5-2	7-7.5	12-12.5
Sample Collection Date		8/4/2009	8/4/2009	8/5/2009	8/5/2009	8/5/2009	8/9/2009	8/9/2009	8/9/2009	8/9/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/7/2009	8/7/2009	8/7/2009	8/7/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/7/2009	8/7/2009	8/7/2009
Fluorene	540,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	10.6	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	34	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	3,200 [2]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	58	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	150 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	460	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	9.4	210 UJ	200 UJ	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	1.6	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitroso-di-n-propylamine	0.144	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	1,500	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	34	400 UJ	400 UJ	400 UJ	380 UJ	400 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	126,000	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,700,000 [3]	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/kg)	**PRGs[1]**																										
A-BHC	1.24	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	13	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-BHC	4.4	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-Chlordane	260	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-BHC	4.4	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	3.4	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	60,000	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	NE	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1,240 [2]	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	NE	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	NE	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-BHC	7.2	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	24	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	3	**2.1**	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDD	1320	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDE	940	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDT	1340	4.0 U	4.0 U	4.0 U	3.8 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-Methoxychlor	44,000 [2]	21 U	20 U	20 U	20 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	188	210 U	200 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Chlordane	260	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UAA Pesticides (µg/kg)	**PRGs[1]**																										
Malathion	3,800	82.2 U	82.2 U	81.1 U	80.5 U	81.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/kg)	**PRGs[1]**																										
2,4,5-T	3,000	11.9 U	11.9 UJ	11.8 UJ	11.7 U	11.8 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP	560 [2]	9.7 U	9.7 UJ	9.6 UJ	9.5 U	9.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	360 [2]	20 U	20 UJ	19.7 UJ	19.6 U	19.8 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (µg/kg)	**PRGs[1]**																										
Aroclor 1016	1840	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	2.4	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	2.4	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	106	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	104	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	176	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	220 [3]	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	NE	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	NE	40 U	40 U	40 U	38 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		**SB-10**	**SB-10**	**SB-11**	**SB-11**	**SB-11**	**SB-11**	**SB-11**	**SB-11**	**SB-12**	**SB-12**	**SB-12**	**SB-12**	**SB-12**	**SB-13**	**SB-13**	**SB-13**	**SB-13**	**SB-13**	**SB-14**	**SB-14**	**SB-14**	**SB-14**	**SB-15**	**SB-15**	**SB-15**	**SB-15**
EPA Lab ID		**4518-136**	**4518-137**	**4518-40**	**4518-41**	**4518-42**	**4518-43**	**4518-44**	**4518-**	**4518-35**	**4518-36**	**4518-37**	**4518-38**	**4518-39**	**4518-104**	**4518-105**	**4518-106**	**4518-107**	**4518-108**	**4518-73**	**4518-74**	**4518-75**	**4518-**	**4518-77**	**4518-78**	**4518-79**	**4518-80**
Sample Collection Depth (ft bgs)		**16-16.5**	**19.5-20**	**0-1**	**5-6**	**10-11**	**16-17**	**19-20**	**19-20**	**0-1**	**5-6**	**10-11**	**15-16**	**19-20**	**0.5-1.5**	**6-6.5**	**11-11.5**	**16.5-17**	**19.5-20**	**7-8**	**10.5-11.5**	**19-20**	**19-20**	**8.5-9**	**12.5-13**	**15-16**	**19-20**
Sample Collection Date		**8/7/2009**	**8/7/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**
VOCs (µg/kg)	**PRGs[1]**																										
1,1,1-Trichloroethane	1,400 [2]	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,1,2,2-Tetrachloroethane	0.52	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,1,2-Trichloroethane	1.56	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,1,2-Trichlorotrifluoroethane	3,000,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,1-Dichloroethane	13.8	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,1-Dichloroethene	50 [2]	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2,3-Trichlorobenzene	1,740	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2,4-Trichlorobenzene	136	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2-Dibromo-3-Chloropropane	0.0028	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2-Dibromoethane	0.036	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2-Dichlorobenzene	7,200	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2-Dichloroethane	0.84	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,2-Dichloropropane	2.6	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,3-Dichlorobenzene	NE	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
1,4-Dichlorobenzene	8.2	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
2-Butanone	30,000	13 U	12 U	12 U	12 U	16 U	13 U	13 U	13 U	**27**	12 U	**21**	**16**	11 U	11 U	**15**	**20**	12 U	12 U	13 U	**12**	19 U	18 U	13 U	12 U	11 U	12 U
2-Hexanone	220	13 U	12 U	12 U	12 U	16 U	13 U	13 U	13 U	14 U	12 U	13 U	12 U	11 U	11 U	11 U	12 U	12 U	12 U	13 U	9.9 U	19 U	18 U	13 U	12 U	11 U	12 U
4-Methyl-2-Pentanone	9,000	13 U	12 U	12 U	12 U	16 U	13 U	13 U	13 U	14 U	12 U	13 U	12 U	11 U	11 U	11 U	12 U	12 U	12 U	13 U	9.9 U	19 U	18 U	13 U	12 U	11 U	12 U
Acetone	90,000	**61**	**50**	**55**	**26**	**35**	**36**	**29**	**25**	**130**	**47**	**61**	**43**	**13**	**61**	**65**	**83**	**25**	**14**	**54**	**45**	**74**	**65**	**79**	**44**	**34**	**47**
Benzene	4.2	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Bromochloromethane	NE	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Bromodichloromethane	0.64	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Bromoform	46	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Bromomethane	44	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Carbon Disulfide	6,200	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Carbon Tetrachloride	3.4	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Chlorobenzene	1,240	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Chloroethane	118,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Chloroform	1.06	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Chloromethane	980	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
cis-1,2-Dichloroethene	420 [2]	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
cis-1,3-Dichloropropene	NE	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Cyclohexane	260,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Dibromochloromethane	0.78	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Dichlorodifluoromethane	12,200	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Ethyl Benzene	34	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Isopropylbenzene	22,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
m and/or p-Xylene	4,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Methyl Acetate	150,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Methyl tert-butyl ether	56	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Methylcyclohexane	NE	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Methylene Chloride	24	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
o-Xylene	24,000	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Styrene	2,200 [2]	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Tetrachloroethene	0.98	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Toluene	13,800 [2]	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
trans-1,2-Dichloroethene	580 [2]	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
trans-1,3-Dichloropropene	NE	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Trichloroethene	14	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Trichlorofluoromethane	16,600	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U
Vinyl Chloride	0.112	6.4 U	5.9 U	5.9 U	6.1 U	7.9 U	6.7 U	6.5 U	6.4 U	6.8 U	6.1 U	6.4 U	6.1 U	5.7 U	5.3 U	5.3 U	6.0 U	6.0 U	6.1 U	6.5 U	5.0 U	9.4 U	9.2 U	6.5 U	6.2 U	5.6 U	6.2 U

Sample Location		SB-10	SB-10	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12	SB-13	SB-13	SB-13	SB-13	SB-13	SB-14	SB-14	SB-14	SB-14	SB-15	SB-15	SB-15	SB-15
EPA Lab ID		4518-136	4518-137	4518-40	4518-41	4518-42	4518-43	4518-44	4518-	4518-35	4518-36	4518-37	4518-38	4518-39	4518-104	4518-105	4518-106	4518-107	4518-108	4518-73	4518-74	4518-75	4518-	4518-77	4518-78	4518-79	4518-80
Sample Collection Depth (ft bgs)		16-16.5	19.5-20	0-1	5-6	10-11	16-17	19-20	19-20	0-1	5-6	10-11	15-16	19-20	0.5-1.5	6-6.5	11-11.5	16.5-17	19.5-20	7-8	10.5-11.5	19-20	19-20	8.5-9	12.5-13	15-16	19-20
Sample Collection Date		8/7/2009	8/7/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
SVOCs (μg/kg)	**PRGs[1]**																										
1,2,4,5-Tetrachlorobenzene	1,020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	280,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	2,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	17,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	1,640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	300,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	15,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	30,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	440,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	7,200,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	16,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	15 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1,500 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	380,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	0.062	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	10,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	90,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	15,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	15 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	13,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	240,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	184,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,300,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		SB-10	SB-10	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12	SB-13	SB-13	SB-13	SB-13	SB-13	SB-14	SB-14	SB-14	SB-14	SB-15	SB-15	SB-15	SB-15
EPA Lab ID		4518-136	4518-137	4518-40	4518-41	4518-42	4518-43	4518-44	4518-	4518-35	4518-36	4518-37	4518-38	4518-39	4518-104	4518-105	4518-106	4518-107	4518-108	4518-73	4518-74	4518-75	4518-	4518-77	4518-78	4518-79	4518-80
Sample Collection Depth (ft bgs)		16-16.5	19.5-20	0-1	5-6	10-11	16-17	19-20	19-20	0-1	5-6	10-11	15-16	19-20	0.5-1.5	6-6.5	11-11.5	16.5-17	19.5-20	7-8	10.5-11.5	19-20	19-20	8.5-9	12.5-13	15-16	19-20
Sample Collection Date		8/7/2009	8/7/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
Fluorene	540,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	10.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	3,200 (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	150 (3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	9.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitroso-di-n-propylamine	0.144	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	1,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	126,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,700,000 (3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (μg/kg)	**PRGs(1)**																										
A-BHC	1.24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-BHC	4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-Chlordane	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-BHC	4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	60,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1,240 (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-BHC	7.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDD	1320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDE	940	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDT	1340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-Methoxychlor	44,000 (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	188	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Chlordane	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UAA Pesticides (μg/kg)	**PRGs(1)**																										
Malathion	3,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (μg/kg)	**PRGs(1)**																										
2,4,5-T	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP	560 (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	360 (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (μg/kg)	**PRGs(1)**																										
Aroclor 1016	1840	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	176	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	220 (3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		**SB-16**	**SB-16**	**SB-16**	**SB-16**	**SB-17**	**SB-17**	**SB-17**	**SB-17**	**SB-18**	**SB-18**	**SB-18**	**SB-18**	**SB-19**	**SB-19**	**SB-19**	**SB-19**	**SB-20**	**SB-20**	**SB-20**	**SB-21**	**SB-21**	**SB-21**	**SB-22**	**SB-22**	**SB-22**
EPA Lab ID		**4518-117**	**4518-118**	**4518-119**	**4518-120**	**4518-109**	**4518-**	**4518-110**	**4518-111**	**4518-121**	**4518-122**	**4518-123**	**4518-124**	**4518-125**	**4518-126**	**4518-**	**4518-128**	**4518-28**	**4518-29**	**4518-30**	**4518-31**	**4518-32**	**4518-33**	**4518-56**	**4518-57**	**4518-58**
Sample Collection Depth (ft bgs)		**0.5-1**	**4.5-5**	**11.5-12.5**	**19.5-20**	**0-1**	**0-1**	**6-6.5**	**9.5-10**	**0-0.5**	**6.5-7.5**	**12-13**	**17.5-18.5**	**0-0.5**	**4-5**	**4-5**	**9.5-10**	**0-1.5**	**6-6.5**	**9.5-10**	**0-0.5**	**5.5-6**	**9.5-10**	**2-2.5**	**7-7.5**	**10-11**
Sample Collection Date		**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/4/2009**	**8/4/2009**	**8/4/2009**
VOCs (µg/kg)	**PRGs(1)**																									
1,1,1-Trichloroethane	1,400 (2)	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,1,2,2-Tetrachloroethane	0.52	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,1,2-Trichloroethane	1.56	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,1,2-Trichlorotrifluoroethane	3,000,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,1-Dichloroethane	13.8	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,1-Dichloroethene	50 (2)	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2,3-Trichlorobenzene	1,740	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2,4-Trichlorobenzene	136	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2-Dibromo-3-Chloropropane	0.0028	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2-Dibromoethane	0.036	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2-Dichlorobenzene	7,200	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2-Dichloroethane	0.84	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,2-Dichloropropane	2.6	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,3-Dichlorobenzene	NE	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
1,4-Dichlorobenzene	8.2	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
2-Butanone	30,000	11 U	12 U	13 U	**11**	NA	NA	NA	NA	NA	13 U	**12**	12 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**24**	**19**	15 U
2-Hexanone	220	11 U	12 U	13 U	11 U	NA	NA	NA	NA	NA	13 U	12 U	12 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12 U	13 U	15 U
4-Methyl-2-Pentanone	9,000	11 U	12 U	13 U	11 U	NA	NA	NA	NA	NA	13 U	12 U	12 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12 U	13 U	15 U
Acetone	90,000	**36**	**37**	**19**	**45**	NA	NA	NA	NA	NA	**23**	**58**	**49**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**140**	**100**	**66**
Benzene	4.2	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Bromochloromethane	NE	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Bromodichloromethane	0.64	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Bromoform	46	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Bromomethane	44	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Carbon Disulfide	6,200	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Carbon Tetrachloride	3.4	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Chlorobenzene	1,240	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Chloroethane	118,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Chloroform	1.06	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Chloromethane	980	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
cis-1,2-Dichloroethene	420 (2)	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
cis-1,3-Dichloropropene	NE	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Cyclohexane	260,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Dibromochloromethane	0.78	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Dichlorodifluoromethane	12,200	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Ethyl Benzene	34	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Isopropylbenzene	22,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
m and/or p-Xylene	4,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Methyl Acetate	150,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Methyl tert-butyl ether	56	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Methylcyclohexane	NE	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Methylene Chloride	24	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
o-Xylene	24,000	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Styrene	2,200 (2)	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Tetrachloroethene	0.98	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Toluene	13,800 (2)	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
trans-1,2-Dichloroethene	580 (2)	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
trans-1,3-Dichloropropene	NE	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Trichloroethene	14	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Trichlorofluoromethane	16,600	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 U
Vinyl Chloride	0.112	5.4 U	6.0 U	6.4 U	5.4 U	NA	NA	NA	NA	NA	6.4 U	5.8 U	5.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9 U	6.3 U	7.7 UJ

Sample Location		SB-16	SB-16	SB-16	SB-16	SB-17	SB-17	SB-17	SB-17	SB-18	SB-18	SB-18	SB-18	SB-19	SB-19	SB-19	SB-19	SB-20	SB-20	SB-20	SB-21	SB-21	SB-21	SB-22	SB-22	SB-22
EPA Lab ID		4518-117	4518-118	4518-119	4518-120	4518-109	4518-	4518-110	4518-111	4518-121	4518-122	4518-123	4518-124	4518-125	4518-126	4518-	4518-128	4518-28	4518-29	4518-30	4518-31	4518-32	4518-33	4518-56	4518-57	4518-58
Sample Collection Depth (ft bgs)		0.5-1	4.5-5	11.5-12.5	19.5-20	0-1	0-1	6-6.5	9.5-10	0-0.5	6.5-7.5	12-13	17.5-18.5	0-0.5	4-5	4-5	9.5-10	0-1.5	6-6.5	9.5-10	0-0.5	5.5-6	9.5-10	2-2.5	7-7.5	10-11
Sample Collection Date		8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/4/2009	8/4/2009	8/4/2009
SVOCs (μg/kg)	**PRGs[1]**																									
1,2,4,5-Tetrachlorobenzene	1,020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	280,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	2,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	17,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	1,640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	300,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	15,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	30,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	440,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	7,200,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	16,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	15 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1,500 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	380,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	0.062	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	10,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	90,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	15,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	15 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	13,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	240,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	184,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,300,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		SB-16	SB-16	SB-16	SB-16	SB-17	SB-17	SB-17	SB-17	SB-18	SB-18	SB-18	SB-18	SB-19	SB-19	SB-19	SB-19	SB-20	SB-20	SB-20	SB-21	SB-21	SB-21	SB-22	SB-22	SB-22
EPA Lab ID		4518-117	4518-118	4518-119	4518-120	4518-109	4518-	4518-110	4518-111	4518-121	4518-122	4518-123	4518-124	4518-125	4518-126	4518-	4518-128	4518-28	4518-29	4518-30	4518-31	4518-32	4518-33	4518-56	4518-57	4518-58
Sample Collection Depth (ft bgs)		0.5-1	4.5-5	11.5-12.5	19.5-20	0-1	0-1	6-6.5	9.5-10	0-0.5	6.5-7.5	12-13	17.5-18.5	0-0.5	4-5	4-5	9.5-10	0-1.5	6-6.5	9.5-10	0-0.5	5.5-6	9.5-10	2-2.5	7-7.5	10-11
Sample Collection Date		8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/4/2009	8/4/2009	8/4/2009
Fluorene	540,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	10.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	3,200 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	150 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	9.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitroso-di-n-propylamine	0.144	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	1,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	126,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,700,000 [3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/kg)	**PRGs[1]**																									
A-BHC	1.24	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
Aldrin	13	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
B-BHC	4.4	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
cis-Chlordane	260	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
D-BHC	4.4	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
Dieldrin	3.4	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
Endosulfan I	60,000	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
Endosulfan Sulfate	NE	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
Endrin	1,240 [2]	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
Endrin Aldehyde	NE	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
Endrin Ketone	NE	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
G-BHC	7.2	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
Heptachlor	24	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
Heptachlor Epoxide	3	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	**3.1 J**	2.1 U	2.1 U	NA	NA	NA
p,p'-DDD	1320	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
p,p'-DDE	940	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
p,p'-DDT	1340	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.3 U	4.0 U	4.2 U	3.6 U	4.0 U	4.1 U	4.2 U	4.0 U	4.2 U	4.2 U	4.0 U	4.0 U	4.1 U	NA	NA	NA
p,p'-Methoxychlor	44,000 [2]	NA	NA	NA	NA	20 U	20 U	20 U	21 U	21 U	22 U	21 U	22 U	18 U	21 U	21 U	22 U	21 U	22 U	22 U	21 U	21 U	21 U	NA	NA	NA
Toxaphene	188	NA	NA	NA	NA	200 U	200 U	200 U	210 U	210 U	220 U	210 U	220 U	180 U	210 U	210 U	220 U	210 U	220 U	220 U	210 U	210 U	210 U	NA	NA	NA
trans-Chlordane	260	NA	NA	NA	NA	2.0 U	2.0 U	2.0 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	1.8 U	2.1 U	2.1 U	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	NA	NA	NA
UAA Pesticides (µg/kg)	**PRGs[1]**																									
Malathion	3,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/kg)	**PRGs[1]**																									
2,4,5-T	3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP	560 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	360 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (µg/kg)	**PRGs[1]**																									
Aroclor 1016	1840	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1221	2.4	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1232	2.4	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1242	106	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1248	104	NA	NA	NA	NA	39 U	39 U	40 U	40 U	**200**	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1254	176	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1260	220 [3]	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1262	NE	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA
Aroclor 1268	NE	NA	NA	NA	NA	39 U	39 U	40 U	40 U	40 U	43 U	40 U	42 U	36 U	40 U	41 U	42 U	40 U	42 U	42 U	40 U	40 U	41 U	NA	NA	NA

Sample Location		SB-22	SB-22	SB-22	SB-23	SB-23	SB-23	SB-23	SB-24	SB-24	SB-24	SB-24	SB-24	SB-24	SB-25	SB-25	SB-25	SB-25	SB-26	SB-26	SB-26	SB-26	SB-27	SB-27	SB-27	SB-27
EPA Lab ID		4518-59	4518-60	4518-60	4518-24	4518-25	4518-26	4518-27	4518-18	4518-19	4518-	4518-21	4518-22	4518-23	4518-85	4518-86	4518-87	4518-88	4518-81	4518-82	4518-83	4518-84	4518-89	4518-90	4518-91	4518-92
Sample Collection Depth (ft bgs)		15-16	19-20	19-20	0.5-1.5	9-10	14-15	19-20	0-1	5-7	5-7	10.5-12	15-16	19-20	4-5	8-9	14-15	19-20	1-2	7-8	14-15	19-20	0-1	6-7	11-12	19-20
Sample Collection Date		8/4/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
VOCs (μg/kg)	PRGs[1]																									
1,1,1-Trichloroethane	1,400 [2]	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,1,2,2-Tetrachloroethane	0.52	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,1,2-Trichloroethane	1.56	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,1,2-Trichlorotrifluoroethane	3,000,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,1-Dichloroethane	13.8	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,1-Dichloroethene	50 [2]	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2,3-Trichlorobenzene	1,740	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2,4-Trichlorobenzene	136	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2-Dibromo-3-Chloropropane	0.0028	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2-Dibromoethane	0.036	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2-Dichlorobenzene	7,200	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2-Dichloroethane	0.84	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,2-Dichloropropane	2.6	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,3-Dichlorobenzene	NE	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
1,4-Dichlorobenzene	8.2	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
2-Butanone	30,000	**14**	**23**	**25**	11 U	**12**	**21**	**23**	**14**	**25**	**48**	16 U	12 U	**19**	13 U	**17**	10 U	11 U	10.0 U	11 U	11 U	**17**	14 U	11 U	**26**	**21**
2-Hexanone	220	13 U	12 U	12 U	11 U	11 U	13 U	12 U	11 U	13 U	24 U	16 U	12 U	12 U	13 U	17 U	10 U	11 U	10.0 U	11 U	11 U	12 U	14 U	11 U	12 U	17 U
4-Methyl-2-Pentanone	9,000	13 U	12 U	12 U	11 U	11 U	13 U	12 U	11 U	13 U	24 U	16 U	12 U	12 U	13 U	17 U	10 U	11 U	10.0 U	11 U	11 U	12 U	14 U	11 U	12 U	17 U
Acetone	90,000	**48**	**93**	**92**	**26**	**48**	**53**	**77**	**72**	**87**	**170**	**30**	**27**	**60**	**33**	**92**	**20**	11 U	**42**	**41**	**43**	**58**	**39**	**31**	**110**	**47**
Benzene	4.2	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Bromochloromethane	NE	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Bromodichloromethane	0.64	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Bromoform	46	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Bromomethane	44	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Carbon Disulfide	6,200	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Carbon Tetrachloride	3.4	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Chlorobenzene	1,240	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Chloroethane	118,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Chloroform	1.06	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Chloromethane	980	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
cis-1,2-Dichloroethene	420 [2]	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
cis-1,3-Dichloropropene	NE	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Cyclohexane	260,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Dibromochloromethane	0.78	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Dichlorodifluoromethane	12,200	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Ethyl Benzene	34	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Isopropylbenzene	22,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
m and/or p-Xylene	4,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Methyl Acetate	150,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Methyl tert-butyl ether	56	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Methylcyclohexane	NE	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Methylene Chloride	24	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
o-Xylene	24,000	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Styrene	2,200 [2]	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Tetrachloroethene	0.98	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Toluene	13,800 [2]	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
trans-1,2-Dichloroethene	580 [2]	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
trans-1,3-Dichloropropene	NE	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Trichloroethene	14	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Trichlorofluoromethane	16,600	6.3 U	6.2 U	5.9 U	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U
Vinyl Chloride	0.112	6.3 U	6.2 U	5.9 UJ	5.6 U	5.6 U	6.6 U	6.1 U	5.7 U	6.4 U	12 U	8.2 U	5.8 U	6.1 U	6.3 U	8.4 U	5.1 U	5.7 U	5.0 U	5.4 U	5.6 U	5.8 U	7.1 U	5.7 U	5.8 U	8.4 U

Sample Location		**SB-22**	**SB-22**	**SB-22**	**SB-23**	**SB-23**	**SB-23**	**SB-23**	**SB-24**	**SB-24**	**SB-24**	**SB-24**	**SB-24**	**SB-24**	**SB-25**	**SB-25**	**SB-25**	**SB-25**	**SB-26**	**SB-26**	**SB-26**	**SB-26**	**SB-27**	**SB-27**	**SB-27**	**SB-27**
EPA Lab ID		**4518-59**	**4518-60**	**4518-60**	**4518-24**	**4518-25**	**4518-26**	**4518-27**	**4518-18**	**4518-19**	**4518-**	**4518-21**	**4518-22**	**4518-23**	**4518-85**	**4518-86**	**4518-87**	**4518-88**	**4518-81**	**4518-82**	**4518-83**	**4518-84**	**4518-89**	**4518-90**	**4518-91**	**4518-92**
Sample Collection Depth (ft bgs)		**15-16**	**19-20**	**19-20**	**0.5-1.5**	**9-10**	**14-15**	**19-20**	**0-1**	**5-7**	**5-7**	**10.5-12**	**15-16**	**19-20**	**4-5**	**8-9**	**14-15**	**19-20**	**1-2**	**7-8**	**14-15**	**19-20**	**0-1**	**6-7**	**11-12**	**19-20**
Sample Collection Date		**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**
SVOCs (µg/kg)	**PRGs[1]**																									
1,2,4,5-Tetrachlorobenzene	1,020	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	280,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	460	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	2,600	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	17,200	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	1,640	NA	NA	NA	400 U	400 U	410 U	420 U	400 U	410 U	410 U	410 U	400 U	410 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	5.8	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	1,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	300,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	3,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	15,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	30,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	3,000	NA	NA	NA	400 U	400 U	410 U	420 U	400 U	410 U	410 U	410 U	400 U	410 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	20	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NE	NA	NA	NA	400 U	400 U	410 U	420 U	400 U	410 U	410 U	410 U	400 U	410 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	100	NA	NA	NA	400 U	400 U	410 U	420 U	400 U	410 U	410 U	410 U	400 U	410 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	2.8	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	3,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	28	NA	NA	NA	400 U	400 U	410 U	420 U	400 U	410 U	410 U	410 U	400 U	410 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NE	NA	NA	NA	400 U	400 U	410 U	420 U	400 U	410 U	410 U	410 U	400 U	410 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	440,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	22,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	7,200,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	3.8	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	16,200	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	150 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	15 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	150 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1,500 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	380,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	500	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	0.062	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	2.4	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	22,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	10,200	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	90,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	15,000 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	15 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	13,600	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	240,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	184,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,300,000 [3]	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		SB-22	SB-22	SB-22	SB-23	SB-23	SB-23	SB-23	SB-24	SB-24	SB-24	SB-24	SB-24	SB-24	SB-25	SB-25	SB-25	SB-25	SB-26	SB-26	SB-26	SB-26	SB-27	SB-27	SB-27	SB-27
EPA Lab ID		4518-59	4518-60	4518-60	4518-24	4518-25	4518-26	4518-27	4518-18	4518-19	4518-	4518-21	4518-22	4518-23	4518-85	4518-86	4518-87	4518-88	4518-81	4518-82	4518-83	4518-84	4518-89	4518-90	4518-91	4518-92
Sample Collection Depth (ft bgs)		15-16	19-20	19-20	0.5-1.5	9-10	14-15	19-20	0-1	5-7	5-7	10.5-12	15-16	19-20	4-5	8-9	14-15	19-20	1-2	7-8	14-15	19-20	0-1	6-7	11-12	19-20
Sample Collection Date		8/4/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
Fluorene	540,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	10.6	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	34	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	3,200 (2)	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	58	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	150 (3)	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	460	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	9.4	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	1.6	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitroso-di-n-propylamine	0.144	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	1,500	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	34	NA	NA	NA	400 UJ	400 UJ	410 UJ	420 UJ	400 UJ	410 UJ	410 UJ	410 UJ	400 UJ	410 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	126,000	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,700,000 (3)	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/kg)	**PRGs[1]**																									
A-BHC	1.24	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	13	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-BHC	4.4	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-Chlordane	260	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-BHC	4.4	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	3.4	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	60,000	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	NE	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1,240 (2)	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	NE	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	NE	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-BHC	7.2	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	24	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	3	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDD	1320	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDE	940	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDT	1340	NA	NA	NA	4.0 U	4.0 U	4.1 U	4.2 U	4.0 U	4.1 U	4.1 U	4.1 U	4.0 U	4.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-Methoxychlor	44,000 (2)	NA	NA	NA	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	188	NA	NA	NA	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Chlordane	260	NA	NA	NA	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UAA Pesticides (µg/kg)	**PRGs[1]**																									
Malathion	3,800	NA	NA	NA	81 U	81.5 U	77.5 U	83.8 U	80.6 U	83 U	82.8 U	83.1 U	83.2 U	82.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/kg)	**PRGs[1]**																									
2,4,5-T	3,000	NA	NA	NA	11.8 U	11.8 U	11.2 U	12.2 U	11.7 U	12.1 U	12 U	12.1 U	12.1 U	11.9 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP	560 (2)	NA	NA	NA	9.6 U	9.6 U	9.2 U	9.9 U	9.5 U	9.8 U	9.8 U	9.8 U	9.9 U	9.7 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	360 (2)	NA	NA	NA	19.7 U	19.8 U	18.8 U	20.4 U	19.6 U	20.2 U	20.1 U	20.2 U	20.2 U	20 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (µg/kg)	**PRGs[1]**																									
Aroclor 1016	1840	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	2.4	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	2.4	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	106	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	104	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	176	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	220 (3)	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1262	NE	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	NE	NA	NA	NA	40 U	40 U	41 U	42 U	40 U	41 U	41 U	41 U	40 U	41 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		**SB-27**	**SB-28**	**SB-28**	**SB-28**	**SB-28**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-30**	**SB-30**	**SB-30**	**SB-30**	**SB-30**	**SB-31**	**SB-31**	**SB-31**	**SB-31**	**SB-31**	**SB-32**	**SB-32**	**SB-32**	**SB-32**	**SB-32**
EPA Lab ID		**4518-**	**4518-94**	**4518-95**	**4518-96**	**4518-97**	**4518-98**	**4518-99**	**4518-7**	**4518-8**	**4518-8FD**	**4518-112**	**4518-113**	**4518-114**	**4518-115**	**4518-116**	**4518-10**	**4518-11**	**4518-12**	**4518-13**	**4518-13FD**	**4518-100**	**4518-101**	**4518-102**	**4518-34**	**4518-103**
Sample Collection Depth (ft bgs)		**19-20**	**2-3**	**6-7**	**12-13**	**19-20**	**0-1**	**11-12**	**15-16**	**18-20**	**18-20**	**0-1**	**5.5-6**	**10.5-11**	**15.5-16**	**19.5-20**	**0-1**	**5-6**	**10-11**	**18-20**	**18-20**	**0-1**	**5.5-6.5**	**10.5-11.5**	**15-16**	**19-20**
Sample Collection Date		**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/7/2009**	**8/6/2009**
VOCs (µg/kg)	**PRGs(1)**																									
1,1,1-Trichloroethane	1,400 (2)	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	0.52	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1.56	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,1,2-Trichlorotrifluoroethane	3,000,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,1-Dichloroethane	13.8	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,1-Dichloroethene	50 (2)	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	1,740	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	136	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	0.0028	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.036	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	7,200	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.84	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,2-Dichloropropane	2.6	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NE	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	8.2	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
2-Butanone	30,000	15 U	**14**	**12**	**16**	11 U	**15**	11 U	11 U	**27**	**39**	**14**	11 U	12 U	12 U	12 U	**20**	12 U	**17**	12 U	8.7 U	**NA**	**NA**	**NA**	**NA**	**NA**
2-Hexanone	220	15 U	12 U	11 U	12 U	11 U	9.5 U	11 U	11 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	13 U	12 U	11 U	12 U	8.7 U	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	9,000	15 U	12 U	11 U	12 U	11 U	9.5 U	11 U	11 U	11 U	11 U	12 U	11 U	12 U	12 U	12 U	13 U	12 U	11 U	12 U	8.7 U	NA	NA	NA	NA	NA
Acetone	90,000	**34**	**64**	**49**	**46**	**15**	**93**	11 U	11 U	**62**	**88**	**56**	**18**	**18**	**24**	**20**	**140**	**55**	**59**	**21**	**16**	**NA**	**NA**	**NA**	**NA**	**NA**
Benzene	4.2	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Bromochloromethane	NE	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Bromodichloromethane	0.64	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Bromoform	46	7.5 U	N/A R	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Bromomethane	44	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Carbon Disulfide	6,200	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Carbon Tetrachloride	3.4	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Chlorobenzene	1,240	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Chloroethane	118,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Chloroform	1.06	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Chloromethane	980	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	420 (2)	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NE	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Cyclohexane	260,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Dibromochloromethane	0.78	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Dichlorodifluoromethane	12,200	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Ethyl Benzene	34	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Isopropylbenzene	22,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
m and/or p-Xylene	4,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Methyl Acetate	150,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	**7.3**	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Methyl tert-butyl ether	56	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Methylcyclohexane	NE	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Methylene Chloride	24	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
o-Xylene	24,000	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Styrene	2,200 (2)	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Tetrachloroethene	0.98	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Toluene	13,800 (2)	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	**NA**	NA	NA	NA
trans-1,2-Dichloroethene	580 (2)	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NE	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Trichloroethene	14	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Trichlorofluoromethane	16,600	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA
Vinyl Chloride	0.112	7.5 U	5.9 U	5.5 U	6.2 U	5.3 U	4.8 U	5.4 U	5.4 U	5.4 U	5.4 U	6.2 U	5.4 U	5.8 U	5.8 U	5.9 U	6.4 U	5.8 U	5.6 U	6.2 U	4.4 U	NA	NA	NA	NA	NA

Sample Location		SB-27	SB-28	SB-28	SB-28	SB-28	SB-29	SB-29	SB-29	SB-29	SB-29	SB-30	SB-30	SB-30	SB-30	SB-30	SB-31	SB-31	SB-31	SB-31	SB-31	SB-32	SB-32	SB-32	SB-32	SB-32
EPA Lab ID		4518-	4518-94	4518-95	4518-96	4518-97	4518-98	4518-99	4518-7	4518-8	4518-8FD	4518-112	4518-113	4518-114	4518-115	4518-116	4518-10	4518-11	4518-12	4518-13	4518-13FD	4518-100	4518-101	4518-102	4518-34	4518-103
Sample Collection Depth (ft bgs)		19-20	2-3	6-7	12-13	19-20	0-1	11-12	15-16	18-20	18-20	0-1	5.5-6	10.5-11	15.5-16	19.5-20	0-1	5-6	10-11	18-20	18-20	0-1	5.5-6.5	10.5-11.5	15-16	19-20
Sample Collection Date		8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/6/2009	8/6/2009	8/6/2009	8/7/2009	8/6/2009
SVOCs (μg/kg)	PRGs[1]																									
1,2,4,5-Tetrachlorobenzene	1,020	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2,4,5-Trichlorophenol	280,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2,4,6-Trichlorophenol	460	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2,4-Dichlorophenol	2,600	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2,4-Dimethylphenol	17,200	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2,4-Dinitrophenol	1,640	NA	NA	NA	NA	NA	NA	410 U	390 U	390 U	380 U	NA	NA	NA	NA	NA	390 U	360 U	360 U	370 U	360 U	NA	NA	NA	430 U	NA
2,4-Dinitrotoluene	5.8	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2,6-Dinitrotoluene	1,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2-Chloronaphthalene	300,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2-Chlorophenol	3,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2-Methylnaphthalene	15,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2-Methylphenol	30,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
2-Nitroaniline	3,000	NA	NA	NA	NA	NA	NA	410 U	390 U	390 U	380 U	NA	NA	NA	NA	NA	390 U	360 U	360 U	370 U	360 U	NA	NA	NA	430 U	NA
2-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
3,3'-Dichlorobenzidine	20	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
3-Nitroaniline	NE	NA	NA	NA	NA	NA	NA	410 U	390 U	390 U	380 U	NA	NA	NA	NA	NA	390 U	360 U	360 U	370 U	360 U	NA	NA	NA	430 U	NA
4,6-Dinitro-2-methylphenol	100	NA	NA	NA	NA	NA	NA	410 U	390 U	390 U	380 U	NA	NA	NA	NA	NA	390 U	360 U	360 U	370 U	360 U	NA	NA	NA	430 U	NA
4-Bromophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
4-Chloro-3-methylphenol	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
4-Chloroaniline	2.8	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
4-Chlorophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
4-Methylphenol	3,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
4-Nitroaniline	28	NA	NA	NA	NA	NA	NA	410 U	390 U	390 U	380 U	NA	NA	NA	NA	NA	390 U	360 U	360 U	370 U	360 U	NA	NA	NA	430 U	NA
4-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	410 U	390 U	390 U	380 U	NA	NA	NA	NA	NA	390 U	360 U	360 U	370 U	360 U	NA	NA	NA	430 U	NA
Acenaphthene	440,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Acenaphthylene	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Acetophenone	22,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Anthracene	7,200,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Atrazine	3.8	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Benzaldehyde	16,200	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Benzo(a)anthracene	150 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Benzo(a)pyrene	15 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Benzo(b)fluoranthene	150 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Benzo(g,h,i)perylene	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Benzo(k)fluoranthene	1,500 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Biphenyl	380,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
bis(2-Chloroethoxy)methane	500	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
bis(2-Chloroethyl)ether	0.062	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
bis(2-Chloroisopropyl)ether	2.4	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
bis(2-Ethylhexyl)phthalate	22,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Butylbenzylphthalate	10,200	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Caprolactam	90,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Carbazole	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Chrysene	15,000 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Dibenz(a,h)anthracene	15 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 UJ	NA
Dibenzofuran	13,600	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Diethylphthalate	240,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Dimethylphthalate	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Di-n-butylphthalate	184,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Di-n-octylphthalate	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Fluoranthene	2,300,000 (3)	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA

Sample Location		SB-27	SB-28	SB-28	SB-28	SB-28	SB-29	SB-29	SB-29	SB-29	SB-29	SB-30	SB-30	SB-30	SB-30	SB-30	SB-31	SB-31	SB-31	SB-31	SB-31	SB-32	SB-32	SB-32	SB-32	SB-32
EPA Lab ID		4518-	4518-94	4518-95	4518-96	4518-97	4518-98	4518-99	4518-7	4518-8	4518-8FD	4518-112	4518-113	4518-114	4518-115	4518-116	4518-10	4518-11	4518-12	4518-13	4518-13FD	4518-100	4518-101	4518-102	4518-34	4518-103
Sample Collection Depth (ft bgs)		19-20	2-3	6-7	12-13	19-20	0-1	11-12	15-16	18-20	18-20	0-1	5.5-6	10.5-11	15.5-16	19.5-20	0-1	5-6	10-11	18-20	18-20	0-1	5.5-6.5	10.5-11.5	15-16	19-20
Sample Collection Date		8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/6/2009	8/6/2009	8/6/2009	8/7/2009	8/6/2009
Fluorene	540,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Hexachlorobenzene	10.6	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Hexachlorobutadiene	34	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Hexachlorocyclopentadiene	3,200 [2]	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Hexachloroethane	58	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Indeno(1,2,3-cd)pyrene	150 [3]	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Isophorone	460	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Naphthalene	9.4	NA	NA	NA	NA	NA	NA	210 U	230	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Nitrobenzene	1.6	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
N-nitroso-di-n-propylamine	0.144	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
N-nitrosodiphenylamine	1,500	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Pentachlorophenol	34	NA	NA	NA	NA	NA	NA	410 UJ	390 UJ	390 UJ	380 UJ	NA	NA	NA	NA	NA	390 UJ	360 UJ	360 UJ	370 UJ	360 UJ	NA	NA	NA	430 UJ	NA
Phenanthrene	NE	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Phenol	126,000	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Pyrene	1,700,000 [3]	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	NA	NA	NA	220 U	NA
Pesticides (µg/kg)	**PRGs[1]**																									
A-BHC	1.24	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
Aldrin	13	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
B-BHC	4.4	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
cis-Chlordane	260	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
D-BHC	4.4	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
Dieldrin	3.4	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
Endosulfan I	60,000	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
Endosulfan Sulfate	NE	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
Endrin	1,240 [2]	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
Endrin Aldehyde	NE	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
Endrin Ketone	NE	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
G-BHC	7.2	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
Heptachlor	24	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
Heptachlor Epoxide	3	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
p,p'-DDD	1320	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
p,p'-DDE	940	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
p,p'-DDT	1340	NA	NA	NA	NA	NA	NA	4.1 U	3.9 U	3.9 U	3.8 U	NA	NA	NA	NA	NA	3.9 U	3.6 U	3.6 U	3.7 U	3.6 U	4.0 U	3.8 U	4.1 U	4.3 U	4.1 U
p,p'-Methoxychlor	44,000 [2]	NA	NA	NA	NA	NA	NA	21 U	20 U	20 U	20 U	NA	NA	NA	NA	NA	20 U	19 U	19 U	19 U	18 U	20 U	20 U	21 U	22 U	21 U
Toxaphene	188	NA	NA	NA	NA	NA	NA	210 U	200 U	200 U	200 U	NA	NA	NA	NA	NA	200 U	190 U	190 U	190 U	180 U	200 U	200 U	210 U	220 U	210 U
trans-Chlordane	260	NA	NA	NA	NA	NA	NA	2.1 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	2.0 U	1.9 U	1.9 U	1.9 U	1.8 U	2.0 U	2.0 U	2.1 U	2.2 U	2.1 U
UAA Pesticides (µg/kg)	**PRGs[1]**																									
Malathion	3,800	NA	NA	NA	NA	NA	NA	79.3 U	76.1 U	79.8 U	79.8 U	NA	NA	NA	NA	NA	78.6 U	76 U	76 U	74.6 U	74.3 U	80.2 U	76.5 U	83.4 U	96.8 U	81.9 U
Herbicides (µg/kg)	**PRGs[1]**																									
2,4,5-T	3,000	NA	NA	NA	NA	NA	NA	11.5 U	11.1 U	11.6 U	11.6 U	NA	NA	NA	NA	NA	11.4 U	11 U	11 U	10.8 UJ	10.8 U	11.7 U	11.1 U	12.1 U	14.1 U	11.9 U
2,4,5-TP	560 [2]	NA	NA	NA	NA	NA	NA	9.4 U	9 U	9.4 U	9.4 U	NA	NA	NA	NA	NA	9.3 U	9 U	9 U	8.8 UJ	8.8 U	9.5 U	9.1 U	9.9 U	11.5 U	9.7 U
2,4-D	360 [2]	NA	NA	NA	NA	NA	NA	19.3 U	18.5 U	19.4 U	19.4 U	NA	NA	NA	NA	NA	19.1 U	18.5 U	18.5 U	18.2 UJ	18.1 U	19.5 U	18.6 U	20.3 U	23.6 U	19.9 U
PCBs (µg/kg)	**PRGs[1]**																									
Aroclor 1016	1840	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1221	2.4	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1232	2.4	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1242	106	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1248	104	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1254	176	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1260	220 [3]	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1262	NE	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U
Aroclor 1268	NE	NA	NA	NA	NA	NA	NA	41 U	39 U	39 U	38 U	NA	NA	NA	NA	NA	39 U	36 U	36 U	37 U	36 U	40 U	38 U	41 U	43 U	41 U

Sample Location		**SB-09**	**SB-09**	**SB-09**	**SB-12**	**SB-12**	**SB-13**	**SB-13**	**SB-13**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-32**	**SB-32**	**SB-32**	**SB-32**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**
EPA Lab ID		**4520-14**	**4520-14FD**	**4520-13**	**4520-10**	**4520-9**	**4520-8**	**4520-6**	**4520-6FD**	**4519-4**	**4520-12**	**4519-2**	**4519-2FD**	**4520-11**	**4520-5**	**4520-4**	**4520-3**	**4520-2**	**4734-10**		**4734-9**		**4734-8**		**4734-6**	**4734-6FD**
Chemsolutions Lab ID		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**SB-33:128-132**	*	**SB-33:134-138**	*	**SB-33:140-144**	*	*
Sample Collection Depth (ft bgs)		**121-125**	**121-125**	**126-130**	**121-125**	**126-130**	**120-124**	**125-129**	**125-129**	**119-123**	**119-123**	**124-128**	**124-128**	**124-128**	**123-127**	**130-134**	**137-141**	**144-148**	**128-132**	**128-132**	**134-138**	**134-138**	**140-144**	**140-144**	**146-150**	**146-150**
Sample Collection Date		**8/12/2009**	**8/12/2009**	**8/12/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**
EDB/DBCP (μg/L)	**PRGs[4]**																									
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	0.020 U
1,2-Dibromoethane	0.05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	NA	0.020 U	NA	NA	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	0.020 U
VOCs (μg/L)	**PRGs[4]**																									
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	59,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	2 U	NA	2 U	NA	2 U	NA	NA
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
2-Butanone	7,100 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	NA	**9.0 J**	5.0 U	**5.3**	5.0 U	**8.6 J**	5.0 U	NA	5.0 U	NA	5.0 U	NA	**7.7**	5.0 U
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U
4-Methyl-2-Pentanone	2,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U
Acetone	22,000 [5]	5.0 U	5.0 U	**18 J**	5.0 U	5.0 U	5.0 U	**5.7 J**	5.0 U	NA	5.0 U	NA	NA	**55 J**	**10**	**31**	**7.8**	**21 J**	5.0 U	NA	5.0 U	NA	5.0 U	NA	**43**	**11**
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	**0.71**	0.50 U
Bromochloromethane	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Bromoform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Bromomethane	8.7 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Carbon Disulfide	1000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	**1.2**	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	**4.0**	0.50 U
Carbon Tetrachloride	5	1.0 U	1.0 U	1.0 U	1.0 U	**10**	1.0 U	1.0 U	1.0 U	NA	**72**	NA	NA	**30**	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	5 U	0.50 U	5 U	0.50 U	5 U	0.50 U	0.50 U
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Chloroethane	21,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Chloroform	80	1.0 U	1.0 U	1.0 U	1.0 U	**2**	1.0 U	1.0 U	1.0 U	NA	**9.9**	NA	NA	**18**	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U
Chloromethane	190 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Cyclohexane	13,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Ethyl Benzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Isopropylbenzene	680 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
m and/or p-Xylene	10,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Methylcyclohexane	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Methylene Chloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Naphthalene	0.14 [5]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	2.0 U	NA	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	0.50 U	NA
o-Xylene	10,000 [6]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U
Toluene	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	**2.4**	**1.7**
trans-1,2-Dichloroethene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Trichloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U
Trichlorofluoromethane	1,300 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U
Vinyl Chloride	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U

Sample Location		**SB-09**	**SB-09**	**SB-09**	**SB-12**	**SB-12**	**SB-13**	**SB-13**	**SB-13**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-32**	**SB-32**	**SB-32**	**SB-32**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**	**SB-33**
EPA Lab ID		**4520-14**	**4520-14FD**	**4520-13**	**4520-10**	**4520-9**	**4520-8**	**4520-6**	**4520-6FD**	**4519-4**	**4520-12**	**4519-2**	**4519-2FD**	**4520-11**	**4520-5**	**4520-4**	**4520-3**	**4520-2**	**4734-10**		**4734-9**		**4734-8**		**4734-6**	**4734-6FD**
Chemsolutions Lab ID		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	**SB-33:128-132**	*	**SB-33:134-138**	*	**SB-33:140-144**	*	*
Sample Collection Depth (ft bgs)		**121-125**	**121-125**	**126-130**	**121-125**	**126-130**	**120-124**	**125-129**	**125-129**	**119-123**	**119-123**	**124-128**	**124-128**	**124-128**	**123-127**	**130-134**	**137-141**	**144-148**	**128-132**	**128-132**	**134-138**	**134-138**	**140-144**	**140-144**	**146-150**	**146-150**
Sample Collection Date		**8/12/2009**	**8/12/2009**	**8/12/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**	**8/7/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**
SVOCs (μg/L)	**PRGs[4]**																									
1,2,4,5-Tetrachlorobenzene	11 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol	1,100	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	6.1 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	110 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	730 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	73 [5]	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	0.22 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	37 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	2,900 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	180 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	150 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	1,800 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	370 [5]	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	0.15 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NE	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	3.7 [5]	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	0.34 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	180 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	3.4 [5]	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	10 U	NA	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	2,200 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	11,000 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	3	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.29 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	1,800 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	110 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	0.012 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	0.32 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	35 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	18,000 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	2.9 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	37 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	29,000 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1,500 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1,500 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	1	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	0.86 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	50	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	4.8 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	71 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	0.12 [5]	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table R5.12
Analytical Results - Source Area Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		SB-09	SB-09	SB-09	SB-12	SB-12	SB-13	SB-13	SB-13	SB-29	SB-29	SB-29	SB-29	SB-29	SB-32	SB-32	SB-32	SB-32	SB-33	SB-33	SB-33	SB-33	SB-33	SB-33	SB-33	SB-33
EPA Lab ID		4520-14	4520-14FD	4520-13	4520-10	4520-9	4520-8	4520-6	4520-6FD	4519-4	4520-12	4519-2	4519-2FD	4520-11	4520-5	4520-4	4520-3	4520-2	4734-10		4734-9		4734-8		4734-6	4734-6FD
Chemsolutions Lab ID		*	*	*	*	*	*	*	* U	*	* U	* U	*	*	*	*	*	*	*	SB-33:128-132	*	SB-33:134-138	*	SB-33:140-144	*	*
Sample Collection Depth (ft bgs)		121-125	121-125	126-130	121-125	126-130	120-124	125-129	125-129 U	119-123	119-123 U	124-128 U	124-128	124-128	123-127	130-134	137-141	144-148	128-132	128-132	134-138	134-138	140-144	140-144	146-150	146-150
Sample Collection Date		8/12/2009	8/12/2009	8/12/2009	8/10/2009	8/10/2009	8/10/2009	8/10/2009	8/10/2009	8/11/2009	8/11/2009	8/11/2009	8/11/2009	8/11/2009	8/7/2009	8/7/2009	8/7/2009	8/7/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
N-nitroso-di-n-propylamine	0.0096 (5)	NA	NA	NA	NA	NA	NA	NA	NA U	5.0	NA U	5.0 U	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	14 (5)	NA	NA	NA	NA	NA	NA	NA	NA U	5.0	NA U	5.0 U	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1	NA	NA	NA	NA	NA	NA	NA	NA U	10 U	NA U	10 U U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	NA	NA	NA	NA	NA	NA	NA	NA	5.0	NA	5.0	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	11,000 (5)	NA	NA	NA	NA	NA	NA	NA	NA	5.0	NA	5.0	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,100 (5)	NA	NA	NA	NA	NA	NA	NA	NA	5.0	NA	5.0	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/L)	**PRGs(4)**																									
A-BHC	0.011 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.071 U	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.004 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.071 U	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-BHC	0.037 (5)	NA	NA	NA	NA	NA	NA	NA	NA U	0.071 U	NA U	0.050 U U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-Chlordane	2	NA	NA	NA	NA	NA	NA	NA	NA	0.071 U	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-BHC	0.037 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.071 U	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.0042 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.14	NA	0.10	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	220 (5)	NA	NA	NA	NA	NA	NA	NA	NA U	0.071 U	NA U	0.050 U U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	NA	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
KEndosulfan Sulfate	NE	NA	NA	NA	NA	NA	NA	NA	NA U	0.14 U	NA U	0.10 U U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	2	NA	NA	NA	NA	NA	NA	NA	NA	0.14	NA	0.10	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	NA	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin etone	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.14	NA	0.10	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-BHC	0.2	NA	NA	NA	NA	NA	NA	NA	NA U	0.071 U	NA U	0.050 U U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.4	NA	NA	NA	NA	NA	NA	NA	NA U	0.071 U	NA U	0.050 U U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.2	NA	NA	NA	NA	NA	NA	NA	NA U	0.071 U	NA U	0.050 U U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDD	0.28 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.14	NA	0.10	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDE	0.2 (5)	NA	NA	NA	NA	NA	NA	NA	NA U	0.14	NA U	0.10 U	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDT	0.2 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.14	NA	0.10	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-Methoxychlor	40	NA	NA	NA	NA	NA	NA	NA	NA	0.71 U	NA	0.50 U	0.50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	3	NA	NA	NA	NA	NA	NA	NA	NA U	7.1	NA U	5.0 U	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Chlordane	2	NA	NA	NA	NA	NA	NA	NA	NA	0.071 U	NA	0.050 U	0.050 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UAA Pesticides (µg/L)	**PRGs(4)**								U		U	U														
Malathion	730 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.9	NA	0.9	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/L)	**PRGs(4)**								U		U	U														
2,4,5-T	370 (5)	NA	NA	NA	NA	NA	NA	NA	NA	0.78	NA	0.78	0.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP	50	NA	NA	NA	NA	NA	NA	NA	NA	0.59 U	NA	0.59 U	0.59 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	70	NA	NA	NA	NA	NA	NA	NA	NA	0.87	NA	0.87	0.87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		**SB-33**	**SB-34**	**SB-35**	**SB-36**	**SB-36**	**SB-36**	**SB-37**	**SB-37**	**SB-37**	**SB-37**	**SB-38**	**SB-38**	**SB-38**	**SB-38**	**SB-38**	**SB-38**	**SB-39**	**SB-39**	**SB-40**	**SB-40**	**SB-40**	**SB-40**	**SB-40**	**SB-40**
EPA Lab ID			**4734-5**	**4734-1**	**4734-4**	**4734-3**	**4734-2**	**4734-16**		**4734-15**		**4734-13**		**4734-12**		**4734-11**		**4734-14**		**4734-19**		**4734-17**	**4734-17FD**		
Chemsolutions Lab ID		**SB-33:146-150**	*	*	*	*	*	*	**SB-37:120-124**	*	**SB-37:125-129**	*	**SB-38:124-128**	*	**SB-38:130-134**	*	**SB-38:138-142**	*	**SB-39:136-140**	*	**SB-40:120-124**	*	*	**SB-40:125-129**	**SB-40:325-329**
Sample Collection Depth (ft bgs)		**146-150**	**126-130**	**124-128**	**116-120**	**120-124**	**125-129**	**120-124**	**120-124**	**125-129**	**125-129**	**124-128**	**124-128**	**130-134**	**130-134**	**138-142**	**138-142**	**136-140**	**136-140**	**120-124**	**120-124**	**125-129**	**125-129**	**125-129**	**125-129**
Sample Collection Date		**12/17/2009**	**12/16/2009**	**12/15/2009**	**12/16/2009**	**12/16/2009**	**12/16/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/17/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**	**12/18/2009**
EDB/DBCP (μg/L)	**PRGs[4]**																								
1,2-Dibromo-3-Chloropropane	0.2	NA	0.020 U	0.020 UJ	0.020 U	0.020 U	0.020 UJ	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	0.020 U	NA	NA
1,2-Dibromoethane	0.05	NA	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	0.020 U	NA	NA
VOCs (μg/L)	**PRGs[4]**																								
1,1,1-Trichloroethane	200	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U
1,1,2,2-Tetrachloroethane	0.067 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,1,2-Trichloroethane	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,1,2-Trichlorotrifluoroethane	59,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,1-Dichloroethane	2.4 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,1-Dichloroethene	7	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,2,3-Trichlorobenzene	29 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	N/A R	NA	0.50 U	0.50 U	NA	NA
1,2,4-Trichlorobenzene	70	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	N/A R	NA	0.50 U	0.50 U	NA	NA
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	2 U	NA	NA	NA	NA	NA	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	NA	2 U	2 U
1,2-Dichlorobenzene	600	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	N/A R	NA	0.50 U	0.50 U	NA	NA
1,2-Dichloroethane	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,2-Dichloropropane	5	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
1,3-Dichlorobenzene	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	N/A R	NA	0.50 U	0.50 U	NA	NA
1,4-Dichlorobenzene	75	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	N/A R	NA	0.50 U	0.50 U	NA	NA
2-Butanone	7,100 [5]	NA	5.0 U	**7.5**	5.0 U	5.0 U	5.0 U	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA
2-Hexanone	47 [5]	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA
4-Methyl-2-Pentanone	2,000 [5]	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA
Acetone	22,000 [5]	NA	5.0 U	**9.6**	5.0 U	5.0 U	5.0 U	**9.7 J**	NA	**19**	NA	5.0 U	NA	5.0 U	NA	**9.8**	NA	5.0 U	NA	5.0 U	NA	**9**	**13**	NA	NA
Benzene	5	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	**0.86 J**	NA	**4**	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	**2.1**	NA	**1.8**	NA	**2.7**	**3.8**	NA	NA
Bromochloromethane	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Bromodichloromethane	80	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Bromoform	80	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	N/A R	NA	0.50 U	0.50 U	NA	NA
Bromomethane	8.7 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Carbon Disulfide	1000 [5]	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	2 U	**0.82**	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U
Carbon Tetrachloride	5	5 U	**5**	**31**	**6.3**	**1.8**	0.50 U	**24 J**	**29**	**13**	**12**	**77**	**92**	**63**	**100**	**97**	**130**	0.50 U	5 U	**10**	**13**	**4.5**	**3.5**	**4.3 J**	**4.4 J**
Chlorobenzene	100	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	**0.83 J**	NA	**2.5**	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	**0.86**	NA	**0.94**	NA	**1.8**	**2.5**	NA	NA
Chloroethane	21,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Chloroform	80	2 U	**1.2**	**4.9**	**3.3**	0.50 U	0.50 U	**7.0 J**	**1.9 J**	**4.7**	**3.5**	**3.3**	**3.1**	**9.6**	**3.7**	**7.2**	**3.4**	0.50 U	2 U	**3.8**	2 U	**1.4**	**2.1**	2 U	2 U
Chloromethane	190 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
cis-1,2-Dichloroethene	70	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
cis-1,3-Dichloropropene	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Cyclohexane	13,000 [5]	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Dibromochloromethane	80	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Dichlorodifluoromethane	390 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Ethyl Benzene	700	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Isopropylbenzene	680 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
m and/or p-Xylene	10,000	NA	0.50 U	**1.1**	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Methyl Acetate	37,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Methyl tert-butyl ether	12 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Methylcyclohexane	NE	NA	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Methylene Chloride	5	NA	0.50 U	2.6 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	10,000 [6]	NA	0.50 U	**0.51**	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Styrene	100	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Tetrachloroethene	5	2 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U
Toluene	1000	NA	**1.5**	**1.9 J**	0.50 U	0.50 U	**1.7**	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	**1.7**	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
trans-1,2-Dichloroethene	100	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
trans-1,3-Dichloropropene	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Trichloroethene	5	2 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	2 U	0.50 U	2 U	**6.8**	**7.3**	**4.9**	**5**	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U
Trichlorofluoromethane	1,300 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA
Vinyl Chloride	2	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA

Sample Location		SB-33	SB-34	SB-35	SB-36	SB-36	SB-36	SB-37	SB-37	SB-37	SB-37	SB-38	SB-38	SB-38	SB-38	SB-38	SB-38	SB-39	SB-39	SB-40	SB-40	SB-40	SB-40	SB-40	SB-40
EPA Lab ID			4734-5	4734-1	4734-4	4734-3	4734-2	4734-16		4734-15		4734-13		4734-12		4734-11		4734-14		4734-19		4734-17	4734-17FD		
Chemsolutions Lab ID		SB-33:146-150	*	*	*	*	*	*	SB-37:120-124	*	SB-37:125-129	*	SB-38:124-128	*	SB-38:130-134	*	SB-38:138-142	*	SB-39:136-140	*	SB-40:120-124	*	*	SB-40:125-129	SB-40:325-329
Sample Collection Depth (ft bgs)		146-150	126-130	124-128	116-120	120-124	125-129	120-124	120-124	125-129	125-129	124-128	124-128	130-134	130-134	138-142	138-142	136-140	136-140	120-124	120-124	125-129	125-129	125-129	125-129
Sample Collection Date		12/17/2009	12/16/2009	12/15/2009	12/16/2009	12/16/2009	12/16/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009
SVOCs (µg/L)	PRGs[4]																								
1,2,4,5-Tetrachlorobenzene	11 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol	1,100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	6.1 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	110 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	730 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	73 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	0.22 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	37 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	2,900 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	180 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	150 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	1,800 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	370 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	0.15 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	3.7 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	0.34 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	180 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	3.4 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	2,200 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	11,000 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.29 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	1,800 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	110 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	0.012 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	0.32 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	35 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caprolactam	18,000 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	2.9 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	37 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	29,000 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	3,700 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1,500 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	1,500 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	0.86 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	4.8 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.029 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	71 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	0.12 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		SB-33	SB-34	SB-35	SB-36	SB-36	SB-36	SB-37	SB-37	SB-37	SB-37	SB-38	SB-38	SB-38	SB-38	SB-38	SB-38	SB-39	SB-39	SB-40	SB-40	SB-40	SB-40	SB-40	SB-40
EPA Lab ID			4734-5	4734-1	4734-4	4734-3	4734-2	4734-16		4734-15		4734-13		4734-12		4734-11		4734-14		4734-19		4734-17	4734-17FD		
Chemsolutions Lab ID		SB-33:146-150	*	*	*	*	*	*	SB-37:120-124	*	SB-37:125-129	*	SB-38:124-128	*	SB-38:130-134	*	SB-38:138-142	*	SB-39:136-140	*	SB-40:120-124	*	*	SB-40:125-129	SB-40:325-329
Sample Collection Depth (ft bgs)		146-150	126-130	124-128	116-120	120-124	125-129	120-124	120-124	125-129	125-129	124-128	124-128	130-134	130-134	138-142	138-142	136-140	136-140	120-124	120-124	125-129	125-129	125-129	125-129
Sample Collection Date		12/17/2009	12/16/2009	12/15/2009	12/16/2009	12/16/2009	12/16/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009
N-nitroso-di-n-propylamine	0.0096 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	14 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	11,000 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,100 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/L)	**PRGs(4)**																								
A-BHC	0.011 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.004 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-BHC	0.037 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-Chlordane	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-BHC	0.037 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.0042 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	220 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-BHC	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDD	0.28 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDE	0.2 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-DDT	0.2 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p,p'-Methoxychlor	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Chlordane	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UAA Pesticides (µg/L)	**PRGs(4)**																								
Malathion	730 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/L)	**PRGs(4)**																								
2,4,5-T	370 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-TP	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-D	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Location		TS1-01	TS1-01	TS1-01	TS1-01	TS1-01	TS1-01	TS1-02	TS1-02	TS1-02	TS1-02	TS1-02	TS1-02	TS1-02	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-03	TS1-04	TS1-04	TS1-04
EPA Lab ID		4522-72	4522-71	4522-69	4522-69FD	4522-68	4522-67	4522-49	4522-48	4522-47	4522-46	4522-45	4522-43	4522-43FD	4522-42	4522-41	4522-40	4522-39	4522-38	4522-36	4522-36FD	4522-35	4522-34	4522-33	4522-32	4522-31	4522-30	4522-29
HAPSITE Lab ID		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Sample Collection Depth (ft bgs)		133-137	143-147	158-162	158-162	168-172	178-182	124-128	134-138	143-147	159-163	169-173	181-185	181-185	124-128	134-138	143-147	159-163	169-173	179-183	179-183	189-193	199-203	209-213	219-223	129-133	139-143	148-152
Sample Collection Date		9/7/2009	9/7/2009	9/7/2009	9/7/2009	9/7/2009	9/7/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/1/2009	9/1/2009	9/1/2009
EDB/DBCP (µg/L)	**PRGs[4]**																											
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/L)	**PRGs[4]**																											
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	59,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	U 0.50 U	U 0.50 U	U 0.50 U	U 0.50 U	U 0.50 U	U 0.50 U	U 0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	7,100 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**12**	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**6.8**	**8.3**	**6.7 J**
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	2,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	22,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	8.7 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Carbon Tetrachloride	5	**41**	**150**	**450**	**400**	**380**	**410**	**20**	**44**	**27**	**100**	**58**	**24**	**19**	**1.8**	**2.9**	**19**	**39**	**0.75**	**3.0**	**7.2**	**0.7**	**2.8**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	21,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Chloroform	80	**59**	**57**	**12**	**140**	**18**	**110**	**4.5**	**5.8**	**32**	**110**	**3.8**	**2.4**	**2.1**	**4.9**	**11**	**23**	**46**	**21**	**6.0**	**4.3**	**1.1**	**0.68**	0.50 U	0.50 U	0.50 U	0.50 U	**0.52**
Chloromethane	190 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	680 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	10,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	**0.52**	**0.57**	0.50 U	**0.77**	0.50 U	**0.59**	0.50 U	0.50 U	0.50 U	**0.93**	**0.59**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	10,000 [6]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	0.50 U	**0.62**	0.50 U	0.50 U	0.50 U	**0.61**	0.50 U	**0.78**	0.50 U	**0.57**	**0.95**	**0.89**	0.50 U	0.50 U	**0.6**	0.50 U	0.50 U	**0.51**	0.50 U	0.50 U	0.50 U	**0.63**	**1.5**	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1,300 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Sample Location		TS1-04	TS1-04	TS1-04	TS1-04	TS1-04	TS1-04	TS1-04	TS1-04	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05	TS1-05
EPA Lab ID		4522-28	4522-26	4522-26FD	4522-25	4522-24	4522-23	4522-22	4522-21	4523-6	4523-6FD			4523-2		4523-1		4523-23		4523-8		4523-5		4523-4		4523-3	
HAPSITE Lab ID		*	*	*	*	*	*	*	*	*	*	ML-TS105-GW-140	ML-TS105-GW-140FD	*	ML-TS105-GW-180	*	ML-TS105-GW-190	*	ML-TS105-GW-200	*	ML-TS105-GW-130	*	ML-TS105-GW-151	*	ML-TS105-GW-160	*	ML-TS105-GW-170
Sample Collection Depth (ft bgs)		157-161	169-173	169-173	179-183	189-193	199-203	209-213	219-223	140	140	140	140	180	180	190	190	200	200	130-134	130-134	151-155	151-155	160-164	160-164	170-174	170-174
Sample Collection Date		9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/20/2009	8/20/2009	8/19/2009	8/19/2009	8/19/2009	8/19/2009	8/21/2009	8/21/2009	8/20/2010	8/20/2010	8/20/2009	8/20/2009	8/20/2009	8/20/2009
EDB/DBCP (µg/L)	**PRGs[4]**																										
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	0.020 U	0.020 U	NA	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA
VOCs (µg/L)	**PRGs[4]**																										
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 UJ	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,1,2-Trichlorotrifluoroethane	59,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA
1,2-Dibromoethane	0.05	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
2-Butanone	7,100 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	**8.3**	NA	5.0	NA	5.0	NA	5.0	NA	5.0	NA
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.0 U	2.0 U	NA	NA	2.0	NA	2.0	NA	2.0	NA	2.0	NA	2.0	NA	2.0	NA	2.0	NA
4-Methyl-2-Pentanone	2,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U	NA	NA	1.0	NA	1.0	NA	1.0	NA	1.0	NA	1.0	NA	1.0	NA	1.0	NA
Acetone	22,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**13**	**12 J**	NA	NA	**15**	NA	**22**	NA	**110**	NA	**8.9 J**	NA	**9.7**	NA	**12**	NA	**34**	NA
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 UJ	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Bromochloromethane	NE	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Bromomethane	8.7 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 UJ	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Carbon Tetrachloride	5	0.50 U	**0.91**	**1.7**	**1.5**	**2.2**	**13**	**1**	**3.9**	1.0 U	1.0 U	1 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Chloroethane	21,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Chloroform	80	**1.5**	**1.9**	**1.2**	**3.1**	**4.7**	**4.8**	**8.1**	**3.5**	1.0 U	1.0 U	1 U	1 U	1.0 U	1 U	1.0 U	1 U	**1.1**	**1.7**	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U
Chloromethane	190 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Cyclohexane	13,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Isopropylbenzene	680 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
m and/or p-Xylene	10,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Methylene Chloride	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	NA	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA
o-Xylene	10,000 [6]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Styrene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Toluene	1000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Trichloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA
Trichlorofluoromethane	1,300 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA

Sample Location		TS2-01	TS2-01	TS2-01	TS2-01	TS2-01	TS2-01	TS2-01	TS2-01	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02	TS2-02
EPA Lab ID		4523-46	4523-46FD	4523-45	4523-44	4523-43	4523-42	4523-41	4523-40	4523-17		4523-16		4523-15		4523-14		4523-13		4523-11		4523-11FD		4523-10		4523-9
HAPSITE Lab ID		*	*	*	*	*	*	*	*	*	ML-TS202-GW-147	*	ML-TS202-GW-155	*	ML-TS202-GW-165	*	ML-TS202-GW-175	*	ML-TS202-GW-185	*	ML-TS202-GW-195	*	ML-TS202-GW-195FD	*	ML-TS202-GW-205	*
Sample Collection Depth (ft bgs)		148-152	148-152	158-162	168-172	178-182	188-192	198-202	208-212	147-151	147-151	155-159	155-159	165-169	165-169	175-179	175-179	185-189	185-189	195-199	195-199	195-199	195-199	205-209	205-209	214-218
Sample Collection Date		8/25/2009	8/25/2009	8/25/2009	8/25/2009	8/24/2010	8/24/2010	8/24/2010	8/24/2010	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009	8/22/2009
EDB/DBCP (μg/L)	**PRGs[4]**																									
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U
VOCs (μg/L)	**PRGs[4]**																									
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,1,2,2-Tetrachloroethane	0.067 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,1,2-Trichlorotrifluoroethane	59,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,1-Dichloroethane	2.4 [5]	**2.3**	**2.4**	**2.9**	**2.6**	**1.1**	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,2,3-Trichlorobenzene	29 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,2-Dibromo-3-Chloropropane	0.2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 UJ
1,2-Dibromoethane	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
2-Butanone	7,100 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	**6.7 J**
2-Hexanone	47 [5]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 UJ	NA	2.0 UJ	NA	2.0 UJ	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 UJ
4-Methyl-2-Pentanone	2,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Acetone	22,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	**8.2 J**	NA	**7.0 J**	NA	**7.1 J**	NA	**7.5 J**	NA	**9.3 J**	NA	**7.1 J**	NA	**6.4 J**	NA	**8.4 J**	NA	**7.2 J**
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ
Bromochloromethane	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Bromoform	80	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Bromomethane	8.7 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Carbon Disulfide	1000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ
Carbon Tetrachloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1 U	1.0 UJ	**1.1**	**1.4 J**	**3.2**	**13**	**14.7**	**3.2**	**7.3**	**2.4**	**2**	**2.0**	**2.2**	**3.8**	**3.1**	1.0 UJ
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Chloroethane	21,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Chloroform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	**2.9 J**	**4.4**	**5.9 J**	**5**	**12 J**	**8**	**12**	**5.9**	**4.3**	**1.6**	**2.3**	**2.2**	**2.5**	**2.2**	1.0 U	1 U	1.0 UJ
Chloromethane	190 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
cis-1,2-Dichloroethene	70	**1.2**	**1.2**	**1.5**	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
cis-1,3-Dichloropropene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Cyclohexane	13,000 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Dichlorodifluoromethane	390 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Ethyl Benzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Isopropylbenzene	680 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
m and/or p-Xylene	10,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Methyl Acetate	37,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 UJ
Methyl tert-butyl ether	12 [5]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Methylcyclohexane	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Methylene Chloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Naphthalene	0.14 [5]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 UJ	NA	2.0 UJ	NA	2.0 UJ	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 U	NA	2.0 UJ
o-Xylene	10,000 [6]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Toluene	1000	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	**2.3 J**
trans-1,2-Dichloroethene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
trans-1,3-Dichloropropene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Trichloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ
Trichlorofluoromethane	1,300 [5]	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ
Vinyl Chloride	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 UJ

Sample Location		TS2-02	TS2-03	TS2-03	TS2-03	TS2-03	TS2-03	TS2-03	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-04	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05
EPA Lab ID			4522-55	4522-54	4522-52	4522-52FD	4522-51	4522-50	4522-66	4522-65	4522-64	4522-62	4522-62FD	4522-61	4522-56	4522-60	4522-59	4522-58	4522-57	4523-39	4523-38		4523-37		4523-36	
HAPSITE Lab ID		ML-TS202-GW-214	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	ML-TS205-GW-144	*	ML-TS205-GW-151	*	ML-TS205-GW-164
Sample Collection Depth (ft bgs)		214-218	130-134	147-151	159-163	159-163	169-173	178-182	134-138	147-151	159-163	169-173	169-173	179-183	184-188	189-193	199-203	209-213	219-223	134-138	144-148	144-148	151-155	151-155	164-168	164-168
Sample Collection Date		8/22/2009	9/5/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2009	9/5/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2009	8/23/2009	8/23/2009	8/23/2009	8/23/2009	8/23/2009	8/23/2009	8/23/2009
EDB/DBCP (μg/L)	**PRGs[4]**																									
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.020 U	0.020 U	NA	0.020 U	NA	0.020 U	NA
VOCs (μg/L)	**PRGs[4]**																									
1,1,1-Trichloroethane	200	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,1,2,2-Tetrachloroethane	0.067 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	5.0 UJ	5.0 UJ	NA	5.0 U	NA	5.0 UJ	NA
1,1,2-Trichloroethane	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,1,2-Trichlorotrifluoroethane	59,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,1-Dichloroethane	2.4 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,1-Dichloroethene	7	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,2,3-Trichlorobenzene	29 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,2,4-Trichlorobenzene	70	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,2-Dibromo-3-Chloropropane	0.2	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	5.0 UJ	5.0 UJ	NA	5.0 U	NA	5.0 UJ	NA
1,2-Dibromoethane	0.05	NA	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,2-Dichlorobenzene	600	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,2-Dichloroethane	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,2-Dichloropropane	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,3-Dichlorobenzene	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
1,4-Dichlorobenzene	75	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
2-Butanone	7,100 [5]	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**12**	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	NA	5.0 U	NA	5.0 UJ	NA
2-Hexanone	47 [5]	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.0 UJ	2.0 UJ	NA	2.0 U	NA	2.0 UJ	NA
4-Methyl-2-Pentanone	2,000 [5]	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Acetone	22,000 [5]	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	NA	5.0 U	NA	**7.8 J**	NA
Benzene	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	0.50 U	0.50 U	**1.3**	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Bromochloromethane	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Bromoform	80	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA
Bromomethane	8.7 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Carbon Disulfide	1000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**1.3**	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Carbon Tetrachloride	5	1 U	0.50 U	0.50 U	**1.9**	**1.5**	**15**	**11**	**2.2**	**0.99**	**4.4**	0.50 U	**1.4 J**	**9.2**	0.50 U	**5.9**	**24**	**64**	**18**	1.0 UJ	1.0 UJ	1 U	1.0 U	1 U	1.0 UJ	1 U
Chlorobenzene	100	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.82**	0.50 U	0.50 U	0.50 U	**0.72**	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Chloroethane	21,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Chloroform	80	**1.6**	0.50 U	**0.81**	**3.4**	**2.9**	**5.3**	**1.6**	**2.6**	**6.8**	**6.4**	**18**	**17**	**21**	**10**	**19**	**19**	**5.2**	**16**	1.0 UJ	1.0 UJ	1 U	**1.8**	1 U	**8.2 J**	**2.4**
Chloromethane	190 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
cis-1,2-Dichloroethene	70	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
cis-1,3-Dichloropropene	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Cyclohexane	13,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Dibromochloromethane	80	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Dichlorodifluoromethane	390 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Ethyl Benzene	700	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Isopropylbenzene	680 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
m and/or p-Xylene	10,000	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Methyl Acetate	37,000 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 UJ	5.0 UJ	NA	5.0 U	NA	5.0 UJ	NA
Methyl tert-butyl ether	12 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Methylcyclohexane	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Methylene Chloride	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**1.4**	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 UJ	2.0 UJ	NA	2.0 U	NA	2.0 UJ	NA
o-Xylene	10,000 [6]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Styrene	100	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Tetrachloroethene	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Toluene	1000	NA	**1.0**	**0.53**	0.50 U	0.50 U	0.50 U	**0.91**	**0.59**	0.50 U	0.50 U	**0.5**	**0.5**	0.50 U	**4.8**	**0.54**	**0.5**	0.50 U	**0.91**	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	**2.1 J**	NA
trans-1,2-Dichloroethene	100	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
trans-1,3-Dichloropropene	NE	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Trichloroethene	5	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA
Trichlorofluoromethane	1,300 [5]	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA
Vinyl Chloride	2	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 U	NA	1.0 UJ	NA

Table R5.15
Analytical Results - Transect 2
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-05	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06	TS2-06
EPA Lab ID		**4523-35**		**4523-34**		**4523-33**			**4523-32**		**4523-31**		**4522-10**	**4522-9**		**4522-8**		**4522-7**		**4522-6**			**4522-5**		**4522-3**	
HAPSITE Lab ID		*	**ML-TS205-GW-174**	*	**ML-TS205-GW-184**	*	**ML-TS205-GW-194**	**ML-TS205-GW-194FD**	*	**ML-TS205-GW-204**	*	**ML-TS205-GW-214**	*		**ML-TS206-GW-144**		**ML-TS206-GW-151**	*	**ML-TS206-GW-164**	*	**ML-TS206-GW-174**	**ML-TS206-GW-174FD**	*	**ML-TS206-GW-184**	*	**ML-TS206-GW-194**
Sample Collection Depth (ft bgs)		**174-178**	**174-178**	**184-188**	**184-188**	**194-198**	**194-198**	**194-198**	**204-208**	**204-208**	**214-218**	**214-218**	**134-138**	**144-148**	**144-148**	**151-155**	**151-155**	**164-168**	**164-168**	**174-178**	**174-178**	**174-178**	**184-188**	**184-188**	**194-198**	**194-198**
Sample Collection Date		**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/24/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**
EDB/DBCP (μg/L)	**PRGs[4]**																									
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	0.020 U	NA	0.020 U	NA	0.020 U	NA	NA	0.020 U	NA	0.020 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (μg/L)	**PRGs[4]**																									
1,1,1-Trichloroethane	200	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,1,2,2-Tetrachloroethane	0.067 [5]	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	NA	5.0 UJ	NA	5.0 UJ	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 UJ	NA
1,1,2-Trichloroethane	5	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 UJ	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 UJ	NA	NA	0.50 U	NA	0.50 UJ	NA
1,1,2-Trichlorotrifluoroethane	59,000 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,1-Dichloroethane	2.4 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,1-Dichloroethene	7	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,2,3-Trichlorobenzene	29 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,2,4-Trichlorobenzene	70	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,2-Dibromo-3-Chloropropane	0.2	5.0 UJ	NA	5.0 UJ	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 UJ	NA
1,2-Dibromoethane	0.05	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.050 U	0.050 U	NA	0.050 U	NA	0.050 U	NA	0.050 U	NA	NA	0.050 U	NA	0.050 U	NA
1,2-Dichlorobenzene	600	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,2-Dichloroethane	5	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,2-Dichloropropane	5	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,3-Dichlorobenzene	NE	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
1,4-Dichlorobenzene	75	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
2-Butanone	7,100 [5]	**6.7 J**	NA	5.0 UJ	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	**76**	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA
2-Hexanone	47 [5]	2.0 UJ	NA	2.0 UJ	NA	2.0 U	NA	NA	2.0 U	NA	2.0 U	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA
4-Methyl-2-Pentanone	2,000 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA
Acetone	22,000 [5]	**18 J**	NA	5.0 UJ	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	**21**	**11**	NA	**11**	NA	**9.7**	NA	5.0 U	NA	NA	5.0 U	NA	**6.5**	NA
Benzene	5	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	NA	1.0 UJ	NA	1.0 UJ	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Bromochloromethane	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Bromodichloromethane	80	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Bromoform	80	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Bromomethane	8.7 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Carbon Disulfide	1000 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	NA	1.0 UJ	NA	1.0 UJ	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Carbon Tetrachloride	5	1.0 UJ	1 U	**3.5 J**	**3.1**	**12**	**13.6**	**14.9**	**41**	**45**	**12**	**15.5**	0.50 U	0.50 U	1 U	0.50 U	1 U	0.50 U	1 U	0.50 U	1 U	1 U	0.50 U	1 U	**0.88**	1 U
Chlorobenzene	100	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	**0.6**	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	**0.51**	NA
Chloroethane	21,000 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Chloroform	80	**7.7 J**	**7.4**	**6.9 J**	**5.4**	**4.8**	**1.6**	**1.6**	**3.5**	**1.7**	**22**	**12.4**	0.50 U	0.50 U	1 U	0.50 U	1 U	0.50 U	1 U	0.50 U	1 U	1 U	0.50 U	1 U	0.50 U	1 U
Chloromethane	190 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
cis-1,2-Dichloroethene	70	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
cis-1,3-Dichloropropene	NE	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 UJ	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 UJ	NA	NA	0.50 U	NA	0.50 UJ	NA
Cyclohexane	13,000 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	**0.93**	NA
Dibromochloromethane	80	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Dichlorodifluoromethane	390 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Ethyl Benzene	700	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Isopropylbenzene	680 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
m and/or p-Xylene	10,000	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Methyl Acetate	37,000 [5]	5.0 UJ	NA	5.0 UJ	NA	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Methyl tert-butyl ether	12 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Methylcyclohexane	NE	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Methylene Chloride	5	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	**2.4**	**2.5**	NA	**2.5**	NA	**2.6**	NA	**2.4**	NA	NA	**2.5**	NA	**0.57**	NA
Naphthalene	0.14 [5]	2.0 UJ	NA	2.0 UJ	NA	2.0 U	NA	NA	2.0 U	NA	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	10,000 [6]	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Styrene	100	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Tetrachloroethene	5	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Toluene	1000	**4.3 J**	NA	1.0 UJ	NA	**1.2 J**	NA	NA	1.0 UJ	NA	**2.0 J**	NA	**1.9**	**0.57**	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
trans-1,2-Dichloroethene	100	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
trans-1,3-Dichloropropene	NE	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 UJ	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 UJ	NA	NA	0.50 U	NA	0.50 UJ	NA
Trichloroethene	5	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Trichlorofluoromethane	1,300 [5]	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	NA	1.0 UJ	NA	1.0 UJ	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA
Vinyl Chloride	2	1.0 UJ	NA	1.0 UJ	NA	1.0 U	NA	NA	1.0 U	NA	1.0 U	NA	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA

Sample Location		**TS2-06**	**TS2-06**	**TS2-06**	**TS2-06**	**TS2-06**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**	**TS2-07**
EPA Lab ID		**4522-3FD**	**4522-2**		**4522-1**		**4522-20**	**4522-19**	**4522-18**	**4522-17**	**4522-16**	**4522-15**	**4522-14**	**4522-13**	**4522-11**	**4522-11FD**
HAPSITE Lab ID		*	*	**ML-TS206-GW-204**	*	**ML-TS206-GW-214**	*	*	*	*	*	*	*	*	*	*
Sample Collection Depth (ft bgs)		**194-198**	**204-208**	**204-208**	**214-218**	**214-218**	**134-138**	**144-148**	**151-155**	**164-168**	**174-178**	**184-188**	**194-198**	**204-208**	**213-217**	**213-217**
Sample Collection Date		**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/23/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/25/2009**
EDB/DBCP (μg/L)	**PRGs[4]**															
1,2-Dibromo-3-Chloropropane	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (μg/L)	**PRGs[4]**															
1,1,1-Trichloroethane	200	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	NA	0.50 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	59,000 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U
1,2-Dibromoethane	0.05	0.050 U	0.050 U	NA	0.050 U	NA	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	7,100 [5]	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	47 [5]	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	2,000 [5]	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	22,000 [5]	**8.2**	**6.4**	NA	**6.3**	NA	5.0 U	5.0 U	5.0 U	5.0 U	**5.8**	**8.1**	**5.5**	**6.3**	**12**	**11**
Benzene	5	0.50 U	0.50 U	NA	**0.73**	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.54**
Bromochloromethane	NE	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	8.7 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	**11**	**14.3**	0.50 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	NA	**0.77**	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	21,000 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	**3.1**	1 U	0.50 U	1 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	190 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	NA	0.50 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 [5]	0.50 U	0.50 U	NA	**0.75**	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	680 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	10,000	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	**2.9**	**3.1**	NA	**0.84**	NA	**0.86**	**0.89**	**0.87**	**3.8**	**0.82**	**0.78 J**	**0.78 J**	**0.84 J**	**1.1**	**1.1**
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	10,000 [6]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	**0.60 J**	NA	**1.6**	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.59**	**0.6**
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	NA	0.50 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1,300 [5]	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Sample Location		TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-01	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-02	TS3-03	TS3-03	TS3-03	TS3-03
EPA Lab ID		4522-128	4522-127	4522-126	4522-125	4522-124	4522-123	4522-122	4522-121	4522-119	4522-119FD	4522-118	4523-28	4523-28FD		4523-27		4523-26		4523-25			4523-24		4522-117	4522-116	4522-115	4522-114
HAPSITE Lab ID		*	*	*	*	*	*	*	*	*	*	*	*	*	ML-TS302-GW-119	*	ML-TS302-GW-129-133	*	ML-TS302-GW-139	*	ML-TS302-GW-164-168	ML-TS302-GW-174-178	*	ML-TS302-GW-184-188	*	*	*	*
Sample Collection Depth (ft bgs)		119-123	129-133	139-142	154-158	164-168	174-178	184-188	194-198	204-208	204-208	214-218	119-123	119-123	119-123	129-133	129-133	139-143	139-143	164-168	164-168	174-178	184-188	184-188	124-128	134-138	142-146	154-158
Sample Collection Date		9/4/2009	9/4/2009	9/4/2009	9/4/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	9/3/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/21/2009	8/20/2009	8/20/2009	8/20/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009
EDB/DBCP (µg/L)	**PRGs[4]**																											
1,2-Dibromo-3-Chloroprop	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.020 U	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	NA	0.020 U	NA	NA	NA	NA	NA
VOCs (µg/L)	**PRGs[4]**																											
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 UJ	5.0 UJ	NA	5.0 UJ	NA	5.0 UJ	NA	10 UJ	NA	NA	5.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroetha	59,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloroprop	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	10 U	NA	NA	5.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.050 U	0.050 U	0.050 U	0.050 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	7,100 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	**25**	NA	NA	**33 J**	NA	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.0 U	2.0 U	NA	2.0 U	NA	2.0 U	NA	4.0 U	NA	NA	**4.4 J**	NA	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	2,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	**2.7**	NA	NA	**4.8 J**	NA	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	22,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 UJ	NA	**91 J**	NA	NA	**81 J**	NA	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.68**	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	2.0 UJ	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	8.7 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	2.0 UJ	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.59**	**0.55**	0.50 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	2.0 U	1 U	1 U	1.0 UJ	1 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	21,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1 U	1.0 U	1 U	1.0 U	1 U	2.0 U	1 U	1 U	1.0 UJ	1 U	0.50 U	0.50 U	**1.2**	0.50 U
Chloromethane	190 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	680 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	10,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	NA	5.0 U	NA	5.0 U	NA	10 U	NA	NA	5.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	0.50 U	0.50 U	**0.63**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.64**	**0.53**	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	NA	2.0 U	NA	2.0 U	NA	4.0 U	NA	NA	2.0 UJ	NA	NA	NA	NA	NA
o-Xylene	10,000 [6]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**1.9**	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	2.0 UJ	NA	NA	**2.5 J**	NA	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1,300 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 UJ	1.0 UJ	NA	1.0 UJ	NA	1.0 UJ	NA	2.0 UJ	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	NA	NA	1.0 UJ	NA	0.50 U	0.50 U	0.50 U	0.50 U

Sample Location		TS3-03	TS3-03	TS3-03	TS3-03	TS3-03	TS3-04	TS3-04	TS3-04	TS3-04	TS3-04	TS3-04	TS3-04	TS3-04	TS3-04	TS3-05	TS3-05	TS3-05	TS3-05	TS3-05	TS3-05	TS3-05	TS3-05	TS3-05
EPA Lab ID		4522-113	4522-112	4522-111	4522-110	4522-109	4522-108	4522-107	4522-106	4522-105	4522-103	4522-103FD	4522-102	4522-101	4522-100	4522-137	4522-136	4522-135	4522-134	4522-133	4522-131	4522-131FD	4522-130	4522-129
HAPSITE Lab ID		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Sample Collection Depth (ft bgs)		164-168	174-178	184-188	194-198	204-208	134-138	142-146	154-158	164-168	174-178	174-178	184-188	199-203	209-212	124-128	134-138	142-146	158-162	168-172	178-182	178-182	188-192	198-202
Sample Collection Date		9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/2/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/1/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2009	9/6/2010	9/6/2010	9/6/2009	9/6/2009
EDB/DBCP (μg/L)	**PRGs[4]**																							
1,2-Dibromo-3-Chloroprop	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (μg/L)	**PRGs[4]**																							
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroetha	59,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloroprop	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	7,100 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**6.5**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	2,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	22,000 [5]	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	8.7 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	0.50 U	**1.1**	**13**	**12**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**3.3**	**0.99**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.51**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	21,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	0.50 U	**1.3**	**1.6**	**2.6**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.56**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	190 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	680 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	10,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.59**	**1**	**0.62**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**1.0**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Naphthalene	0.14 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	10,000 [6]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	0.50 U	0.50 U	0.50 U	**0.77**	0.50 U	0.50 U	0.50 U	**0.69**	**0.92**	**0.66**	**1.1**	**0.52**	**1.4**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.57**	**0.58**	**0.83**	**1.3**
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1,300 [5]	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table R5.20
Analytical Results - Transect 4
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-01	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03	TS4-03
EPA Lab ID		4735-7		4735-6		4735-4	4735-4FD			4735-3		4735-2		4735-1		4735-14		4735-13		4735-12		4735-10	4735-10FD			4735-9	
Chemsolutions Lab ID			TS4-01:164-168		TS4-01:174-178			TS4-01:184-188	TS4-01:384-388		TS4-01:194-198		TS4-01:204-208		TS4-01:214-218		TS4-03:124-128		TS4-03:138-142		TS4-03:149-153			TS4-03:159-163	TS4-03:359-363		TS4-03:169-173
Sample Collection Depth (ft bgs)		164-168	164-168	174-178	174-178	184-188	184-188	184-188	184-188	194-198	194-198	204-208	204-208	214-218	214-218	124-128	124-128	138-142	138-142	149-153	149-153	159-163	159-163	159-163	159-163	169-173	169-173
Sample Collection Date		12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2009	12/20/2029	12/20/2029	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009	12/21/2009
EDB/DBCP (μg/L)	**PRGs(4)**																										
1,2-Dibromo-3-Chloropro	0.2	0.020 U	NA	0.020 U	NA	0.020 UJ	0.020 UJ	NA	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	0.020 U	NA	NA	0.020 U	NA
1,2-Dibromoethane	0.05	0.020 U	NA	0.020 U	NA	0.020 U	0.020 UJ	NA	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	NA	0.020 U	0.020 U	NA	NA	0.020 U	NA
VOCs (μg/L)	**PRGs(4)**																										
1,1,1-Trichloroethane	200	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U
1,1,2,2-Tetrachloroethane	0.067 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,1,2-Trichloroethane	5	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,1,2-Trichlorotrifluoroeth	59,000 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,1-Dichloroethane	2.4 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,1-Dichloroethene	7	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,2,3-Trichlorobenzene	29 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,2,4-Trichlorobenzene	70	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,2-Dibromoethane	0.05	NA	2 U	NA	2 U	NA	NA	2 U	2 U	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	2 U	NA	NA	2 U	2 U	NA	2 U
1,2-Dichlorobenzene	600	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,2-Dichloroethane	5	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,2-Dichloropropane	5	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,3-Dichlorobenzene	NE	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
1,4-Dichlorobenzene	75	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
2-Butanone	7,100 (5)	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA
2-Hexanone	47 (5)	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA
4-Methyl-2-Pentanone	2,000 (5)	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA
Acetone	22,000 (5)	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	NA	5.0 U	5.0 U	NA	NA	5.0 U	NA
Benzene	5	0.50 U	NA	**0.51**	NA	**1**	**1**	NA	NA	**0.71**	NA	**0.71**	NA	**3.9 J**	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Bromochloromethane	NE	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Bromodichloromethane	80	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Bromoform	80	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Bromomethane	8.7 (5)	0.50 UJ	NA	0.50 UJ	NA	0.50 UJ	0.50 UJ	NA	NA	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Carbon Disulfide	1000 (5)	0.50 UJ	2 U	0.50 UJ	2 U	0.50 UJ	0.50 UJ	2 U	2 U	0.50 UJ	2 U	0.50 UJ	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U
Carbon Tetrachloride	5	0.50 U	5 U	0.50 U	5 U	0.50 U	0.50 U	5 U	5 U	0.50 U	5 U	0.50 U	5 U	0.50 U	5 U	0.50 U	5 U	0.50 U	5 U	0.50 U	5 U	0.50 U	0.50 U	5 U	5 U	0.50 U	5 U
Chlorobenzene	100	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	**1.5**	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Chloroethane	21,000 (5)	0.50 UJ	NA	0.50 UJ	NA	0.50 UJ	0.50 UJ	NA	NA	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Chloroform	80	0.50 U	2 U	0.50 U	2 U	**1.3**	**1.3**	2 U	2 U	**2.1**	2 U	**1.1**	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U
Chloromethane	190 (5)	0.50 UJ	NA	0.50 UJ	NA	0.50 UJ	0.50 UJ	NA	NA	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
cis-1,2-Dichloroethene	70	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
cis-1,3-Dichloropropene	NE	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Cyclohexane	13,000 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Dibromochloromethane	80	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Dichlorodifluoromethane	390 (5)	0.50 UJ	NA	0.50 UJ	NA	0.50 UJ	0.50 UJ	NA	NA	0.50 UJ	NA	0.50 UJ	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Ethyl Benzene	700	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Isopropylbenzene	680 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
m and/or p-Xylene	10,000	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Methyl Acetate	37,000 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Methyl tert-butyl ether	12 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Methylcyclohexane	NE	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Methylene Chloride	5	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
o-Xylene	10,000 (6)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Styrene	100	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Tetrachloroethene	5	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U
Toluene	1000	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	**0.53**	NA	**0.86**	**0.92**	NA	NA	**1.4**	NA
trans-1,2-Dichloroethene	100	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
trans-1,3-Dichloropropene	NE	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Trichloroethene	5	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	2 U
Trichlorofluoromethane	1,300 (5)	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA
Vinyl Chloride	2	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	NA	0.50 U	0.50 U	NA	NA	0.50 U	NA

Table R5.21
Analytical Results - Baseline Groundwater Sampling
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		MW-1A	MW-2A	MW-3A	MW-3B	MW-3B	MW-3D	MW-3E	MW-4A	MW-4B	MW-5A	MW-5B	MW-5B	MW-5D	MW-6A	MW-6D	MW-6D	MW-6E	MW-7A	MW-7B	MW-8A	MW-9A	MW-10A	MW-10B	MW-11A	MW-12A	MW-12C	MW-12C	MW-12D
EPA ID		**4931-22**	**4931-23**	**4931-5**	**4931-6**	**4931-6FD**	**4931-8**	**4931-9**	**4931-27**	**4931-28**	**4931-32**	**4931-30**	**4931-30FD**	**4931-33**	**4931-36**	**4931-34**	**4931-34FD**	**4931-37**	**4931-19**	**4931-20**	**4931-4**	**4931-21**	**4932-32**	**4932-31**	**4932-28**	**4932-23**	**4932-21**	**4932-21FD**	**4932-18**
Sample Date		**06/18/2010**	**06/18/2010**	**06/19/2010**	**06/19/2010**	**06/19/2010**	**06/19/2010**	**06/19/2010**	**06/18/2010**	**06/18/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/17/2010**	**06/17/2010**	**06/18/2010**	**06/17/2010**	**06/21/2010**	**06/21/2010**	**06/20/2010**	**06/19/2010**	**06/19/2010**	**06/19/2010**	**06/19/2010**
VOCs (µg/L)	PRG [4]																												
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	59000 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	7100 [5]	5.0 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	2000 [5]	5.0 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	22000 [5]	5.0 U	5.0 U	5.0 U	10 U	10 U	5.0 U	**76**	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	NE	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	8.7 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	0.50 U	**7.4**	**190**	**170**	0.50 U	0.50 U	**12**	**1300**	**13**	**24**	**27**	0.50 U	**17**	0.50 U	0.50 U	**33**	0.50 U	0.50 U	0.50 U	0.50 U	**0.5**	0.50 U	0.50 U	0.50 U	**26**	**28**	**2.1**
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	21,000 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**1.5**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	190 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	680 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	10,000	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	10,000 [6]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1300 [5]	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methane, Ethane, Ethene (µg/L)	PRG [4]																												
Ethane	NE	NA	NA	**0.03**	2 U	2 U	2 U	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	NA	NA	NA	NA	NA	NA	NA	2 U
Ethene	NE	NA	NA	2 U	3 U	3 U	3 U	3 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3 U	NA	NA	NA	NA	NA	NA	NA	3 U
Methane	NE	NA	NA	3 U	1 U	1 U	1 U	**1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	NA	NA	NA	NA	NA	NA	NA	1 U
Other (mg/L)	PRG [4]																												
Alkalinity, total	NE	NA	NA	**262**	**274**	**281**	**248**	**216**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**421**	NA	NA	NA	NA	NA	NA	NA	**173**
Chloride	250 [6]	NA	NA	**34.8**	**32.6**	**32.3**	**17**	**18.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**85.0 J**	NA	NA	NA	NA	NA	NA	NA	**11.1**
Sulfate	250 [6]	NA	NA	**57.9**	**68.3**	**69.2**	**31.4**	**36**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**59.7**	NA	NA	NA	NA	NA	NA	NA	**24.6**
Phosphorus	0.73 [5]	NA	NA	**0.325**	**0.314**	**0.311**	**0.191**	**0.296**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.372**	NA	NA	NA	NA	NA	NA	NA	**0.19**
Solids, nonfilterable	NE	NA	NA	1 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	NA	**9.75**
Nitrate + Nitrite as Nitrogen	1000	NA	NA	**18.3**	**18.4**	**17.8**	**11.6**	**11.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**26.4**	NA	NA	NA	NA	NA	NA	NA	**6.32**
Solids, total dissolved	500 [6]	NA	NA	**533**	**579**	**578**	**443**	**402**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**828**	NA	NA	NA	NA	NA	NA	NA	**317**
Total Organic Carbon	NE	NA	NA	NA	**2.3**	**2.2**	**1.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.9**	NA	NA	NA	NA	NA	NA	NA	**1.3**

Table R5.21
Analytical Results - Baseline Groundwater Sampling
Garvey Elevator Superfund Site
Hastings, NE

Sample Location		MW-13C	MW-13C	MW-13E	MW-14A	MW-16A	MW-16C	MW-17A	MW-17C	MW-17C	MW-17D	MW-18A	MW-18C	MW-18D	MW-19A	MW-19C	MW-20A	MW-20C	MW-20D	MW-20E	MW-30A	MW-30C	MW-30D	MW-30E	MW-31A	MW-31C	Old Rolls	New Rolls	Walter 1
EPA ID		**4931-24**	**4931-24FD**	**4931-26**	**4932-37**	**4932-29**	**4932-30**	**4932-19**	**4932-20**	**4932-20FD**	**4932-13**	**4932-12**	**4932-2**	**4932-1**	**4931-17**	**4931-16**	**4931-18**	**4931-14**	**4931-13**	**4931-15**	**4931-3**	**4931-2**	**4931-1**	**4931-12**	**4931-11**	**4931-10**	**4931-38**	**4931-39**	**4523-30**
Sample Date		**06/18/2010**	**06/18/2010**	**06/18/2010**	**06/21/2010**	**06/21/2010**	**06/21/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/15/2010**	**06/15/2010**	**06/15/2010**	**06/17/2010**	**06/17/2010**	**06/17/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/15/2010**	**06/15/2010**	**06/21/2010**	**06/21/2010**	**8/21/2009**
VOCs (μg/L)	PRG (4)																												
1,1,1-Trichloroethane	200	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,1,2,2-Tetrachloroethane	0.067 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5 UJ
1,1,2-Trichloroethane	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,1,2-Trichlorotrifluoroethane	59000 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,1-Dichloroethane	2.4 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,1-Dichloroethene	7	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,2,3-Trichlorobenzene	29 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,2,4-Trichlorobenzene	70	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5 U
1,2-Dibromoethane	0.05	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.02 U
1,2-Dichlorobenzene	600	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,2-Dichloroethane	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,2-Dichloropropane	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,3-Dichlorobenzene	NE	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
1,4-Dichlorobenzene	75	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
2-Butanone	7100 (5)	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U
2-Hexanone	47 (5)	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2 U
4-Methyl-2-Pentanone	2000 (5)	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1 U
Acetone	22000 (5)	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**150**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**9.8**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U
Benzene	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 UJ
Bromochloromethane	NE	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA
Bromodichloromethane	80	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Bromoform	80	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Bromomethane	8.7 (5)	0.50 U	1.0 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	1 U
Carbon Disulfide	1000 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	0.50 U	**0.79**	0.50 U	0.50 U	0.50 U	1 UJ
Carbon Tetrachloride	5	**160**	**170**	0.50 U	0.50 U	0.50 U	0.50 U	**1.1**	**27**	**26**	0.50 U	0.50 U	**11**	**3.7**	**69**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**90**	0.50 U	0.50 U	0.50 U	**11**	0.50 U	0.50 U	0.50 U	**12**
Chlorobenzene	100	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Chloroethane	21,000 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Chloroform	80	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**2.2**	0.50 U	**0.85**	0.50 U	0.50 U	0.50 U	**2.8**	**0.98**	**2.5**	**3.1**	**7.9**	0.50 U	0.50 U	0.50 U	1 U
Chloromethane	190 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
cis-1,2-Dichloroethene	70	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
cis-1,3-Dichloropropene	NE	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Cyclohexane	13,000 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Dibromochloromethane	80	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Dichlorodifluoromethane	390 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Ethyl Benzene	700	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Isopropylbenzene	680 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
m and/or p-Xylene	10,000	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Methyl Acetate	37,000 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	0.50 U	**2.4**	0.50 U	0.50 U	0.50 U	5 U
Methyl tert-butyl ether	12 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Methylcyclohexane	NE	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Methylene Chloride	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
o-Xylene	10,000 (6)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Styrene	100	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Tetrachloroethene	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Toluene	1000	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.6**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 UJ
trans-1,2-Dichloroethene	100	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
trans-1,3-Dichloropropene	NE	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Trichloroethene	5	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**3.7**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Trichlorofluoromethane	1300 (5)	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 UJ
Vinyl Chloride	2	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U
Methane, Ethane, Ethene (μg/L)	PRG (4)																												
Ethane	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	NA	NA	NA	NA	NA	NA	2 U	2 U	2 U	NA	NA	NA	NA	NA	NA
Ethene	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	3 U	3 U	3 U	3 U	NA	NA	NA	NA	NA	NA	3 U	3 U	3 U	NA	NA	NA	NA	NA	NA
Methane	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U	**2**	**9**	NA	NA	NA	NA	NA	NA
Other (mg/L)	PRG (4)																												
Alkalinity, total	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	**127**	**152**	**277**	**176**	NA	NA	NA	NA	NA	NA	**273**	**232**	**255**	NA	NA	NA	NA	NA	NA
Chloride	250 (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.2**	**22.7**	**24.4**	**13.4**	NA	NA	NA	NA	NA	NA	**22.5**	**21.2**	**22.3**	NA	NA	NA	NA	NA	NA
Sulfate	250 (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9.9**	**22**	**28.9**	**22.7**	NA	NA	NA	NA	NA	NA	**43.3**	**39.8**	**38.2**	NA	NA	NA	NA	NA	NA
Phosphorus	0.73 (5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.228**	**0.69**	**0.288**	**0.165**	NA	NA	NA	NA	NA	NA	**0.303**	**0.357**	**0.413**	NA	NA	NA	NA	NA	NA
Solids, nonfilterable	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	**42.5**	**113 J**	**4**	**21.5**	NA	NA	NA	NA	NA	NA	**4.89**	4.00 U	**4.09**	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite as Nitrogen	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.49**	**6.04**	**10.9**	**7.96**	NA	NA	NA	NA	NA	NA	**12.7**	**12.6**	**9.54**	NA	NA	NA	NA	NA	NA
Solids, total dissolved	500 (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	**187**	**356**	**458**	**311**	NA	NA	NA	NA	NA	NA	**512**	**460**	**477**	NA	NA	NA	NA	NA	NA
Total Organic Carbon	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.4**	1.0 U	NA	NA	NA	NA	NA	NA	**2.3**	**1.2**	**8.4**	NA	NA	NA	NA	NA	NA

Sample Location		**MW-41-D1**	**MW-41-D2**	**MW-42D**	**MW-42D**	**MW-42E**	**MW-43D**	**MW-43E**	**MW-44D**	**MW-44E**	**MW-45C**	**MW-45C**	**MW-45D**	**MW-45D**	**MW-46-D1**	**MW-46-D2**	**MW-104A**	**MW-104C**	**MW-104D**	**MW-105A**	**MW-105C**	**MW-105D**	**MW-106A**	**MW-106C**	**MW-106D**
EPA ID		**4932-27**	**4932-26**	**4932-9**	**4932-9FD**	**4932-8**	**4932-25**	**4932-24**	**4932-14**	**4932-15**	**4932-5**	**4932-5FD**	**4932-3**	**4932-3FD**	**4932-6**	**4932-7**	**4932-36**	**4932-34**	**4932-35**	**4932-16**	**4932-17**	**4932-11**	**4932-38**	**4932-39**	**4932-33**
Sample Date		**06/20/2010**	**06/20/2010**	**06/18/2010**	**06/18/2010**	**06/17/2010**	**06/20/2010**	**06/20/2010**	**06/18/2010**	**06/18/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/16/2010**	**06/17/2010**	**06/17/2010**	**06/21/2010**	**06/21/2010**	**06/21/2010**	**06/18/2010**	**06/19/2010**	**06/19/2010**	**06/21/2010**	**06/21/2010**	**06/21/2010**
VOCs (μg/L)	PRG [4]																								
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.067 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	59000 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	29 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	7100 [5]	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	47 [5]	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	2000 [5]	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	22000 [5]	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	NE	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	8.7 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
Carbon Disulfide	1000 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	**2.4**	**14**	NA	**52**	0.50 U	**1.2**	**9.8**	0.50 U	0.50 U	0.50 U	0.50 U	NA	**250**	**100**	0.50 U	0.50 U	0.50 U	0.50 U	**97**	**23**	0.50 U	0.50 U	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	21,000 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	**4.3**	**0.83**	0.50 U	0.50 U	0.50 U	0.50 U	**1.5**	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	190 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	390 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	680 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	10,000	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	37,000 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	10,000 [6]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	**19**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	NE	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1300 [5]	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methane, Ethane, Ethene (μg/L)	PRG [4]																								
Ethane	NE	NA	NA	2 U	2 U	2 U	NA	NA	2 U	2 U	2 U	NA	2 U	2 U	NA	2 U	NA	NA	NA	2 U	2 U	2 U	NA	NA	NA
Ethene	NE	NA	NA	3 U	3 U	3 U	NA	NA	3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	NA	NA	NA	3 U	3 U	3 U	NA	NA	NA
Methane	NE	NA	NA	1 U	1 U	1 U	NA	NA	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	NA	NA	NA	1 U	1 U	1 U	NA	NA	NA
Other (mg/L)	PRG [4]																								
Alkalinity, total	NE	NA	NA	**183**	**181**	**159**	NA	NA	**146**	**138**	**225**	NA	**203**	**202**	NA	**171**	NA	NA	NA	**336**	**223**	**155**	NA	NA	NA
Chloride	250 [6]	NA	NA	**20**	**19.9**	**11.6**	NA	NA	**9.3**	**5.7**	**22.1**	NA	**14.4**	**14.9**	NA	**12**	NA	NA	NA	**19.5**	**27.5**	**8.9**	NA	NA	NA
Sulfate	250 [6]	NA	NA	**24**	**24**	**18.2**	NA	NA	**15.1**	**11.8**	**43.6**	NA	**29.5**	**30.5**	NA	**24.5**	NA	NA	NA	**41.8**	**36.2**	**19.2**	NA	NA	NA
Phosphorus	0.73 [5]	NA	NA	**0.142**	**0.144**	**0.154**	NA	NA	**0.174**	**0.117**	**0.35**	NA	**0.508**	**0.456**	NA	**0.209**	NA	NA	NA	**0.324**	**0.183**	**0.171**	NA	NA	NA
Solids, nonfilterable	NE	NA	NA	**3.15**	**28.2**	**12.4**	NA	NA	**16.4**	**8.04**	**256**	NA	**253**	**72.4**	NA	**72.2**	NA	NA	NA	**33.2**	**12.2**	**14.2**	NA	NA	NA
Nitrate + Nitrite as Nitrogen	1000	NA	NA	**9.65**	**9.52**	**5.79**	NA	NA	**4.59**	**2.46**	**12.8**	NA	**9.57**	**9.59**	NA	**6.37**	NA	NA	NA	**14**	**4.1**	**4.08**	NA	NA	NA
Solids, total dissolved	500 [6]	NA	NA	**350**	**345**	**279**	NA	NA	**291**	**219**	**458**	NA	**357**	**370**	NA	**313**	NA	NA	NA	**556**	**424**	**259**	NA	NA	NA
Total Organic Carbon	NE	NA	NA	**1.7**	**1.3**	**1.3**	NA	NA	NA	NA	**1.3**	NA	**1.3**	**1.4**	NA	**1.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix S

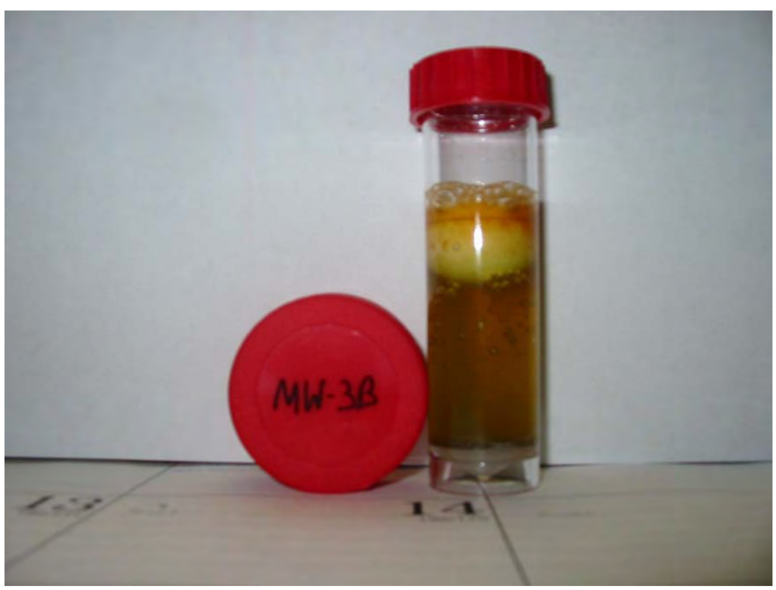
Analytical Laboratory Reports

Material Provided in Electronic Copy Only

- EPA Region 7 Laboratory Results
- PNOD Laboratory Results
- Alpha-Omega Geotech Laboratory Results
- ChemSolutions Laboratory Results
- HAPSITE Laboratory Results
- BART Results

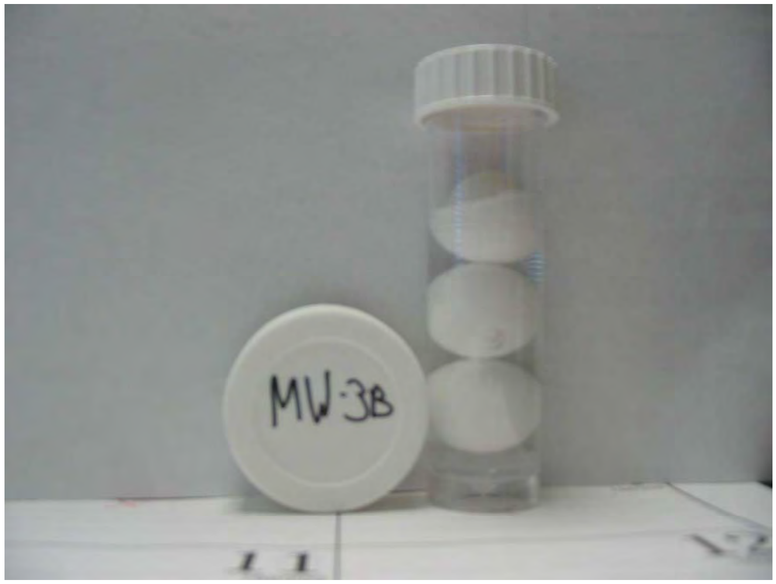
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

Photograph No.: 1	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1347	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-3B. The vial exhibits a positive result for denitrifying bacteria.			



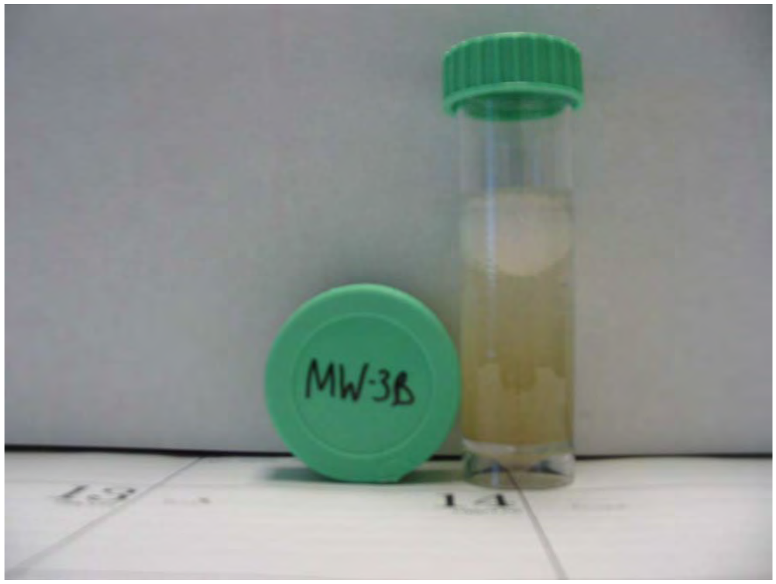
Photograph No.: 2	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1239	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-3B. The vial exhibits positive results for anaerobic, heterotrophic and iron-related bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

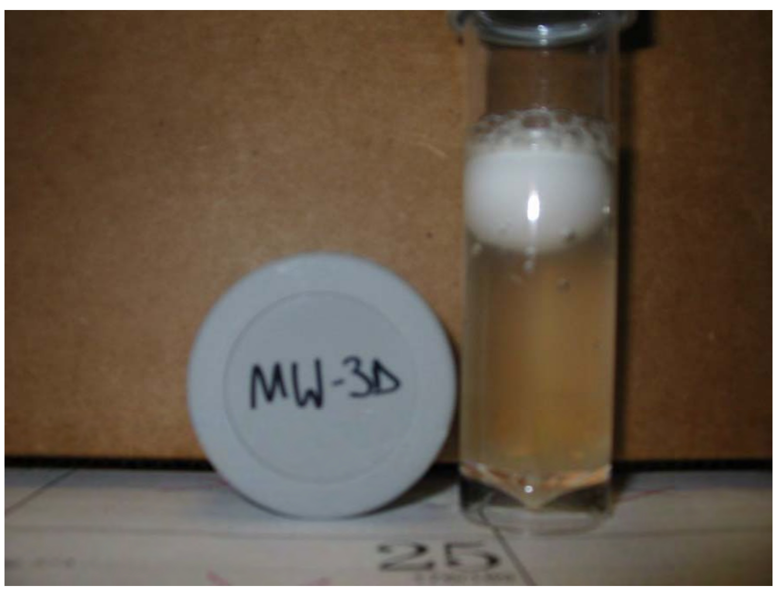


Photograph No.: 3	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1523	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-3B. The vial exhibits a negative result for nitrifying bacteria.			

Photograph No.: 4	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1239	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-3B. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			



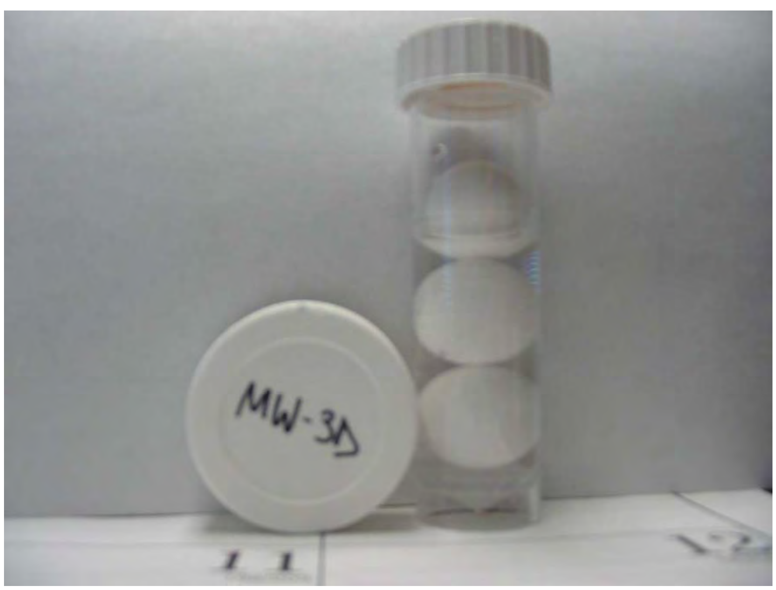
<table>
<tr><td rowspan="2">Photograph No.: 5</td><td>Photographer: M. Schlegel</td><td>Date: 7/2/2010</td><td>Contract: EPA Region 7 AES</td></tr>
<tr><td>Direction: NA</td><td>Time: 1238</td><td>Project No. EP9033.01.22.02.02</td></tr>
<tr><td colspan="4">Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-3B. The vial exhibits positive results for Slime-forming and dense slime bacteria.</td></tr>
</table>



<table>
<tr><td rowspan="2">Photograph No.: 6</td><td>Photographer: M. Schlegel</td><td>Date: 6/28/2010</td><td>Contract: EPA Region 7 AES</td></tr>
<tr><td>Direction: West</td><td>Time: 1351</td><td>Project No. EP9033.01.22.02.02</td></tr>
<tr><td colspan="4">Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-3D. The vial exhibits a positive result for denitrifying bacteria.</td></tr>
</table>

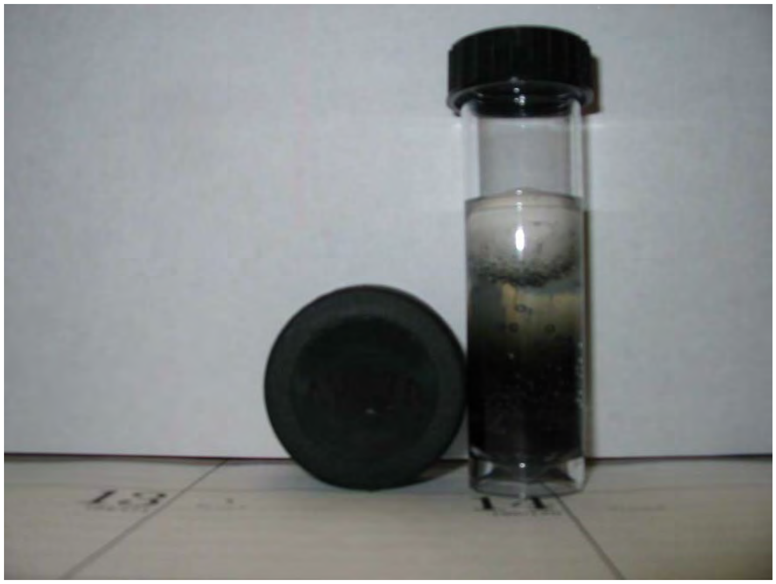
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

Photograph No.: 7	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1240	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-3D. The vial exhibits positive results for anaerobic and iron-related bacteria.			

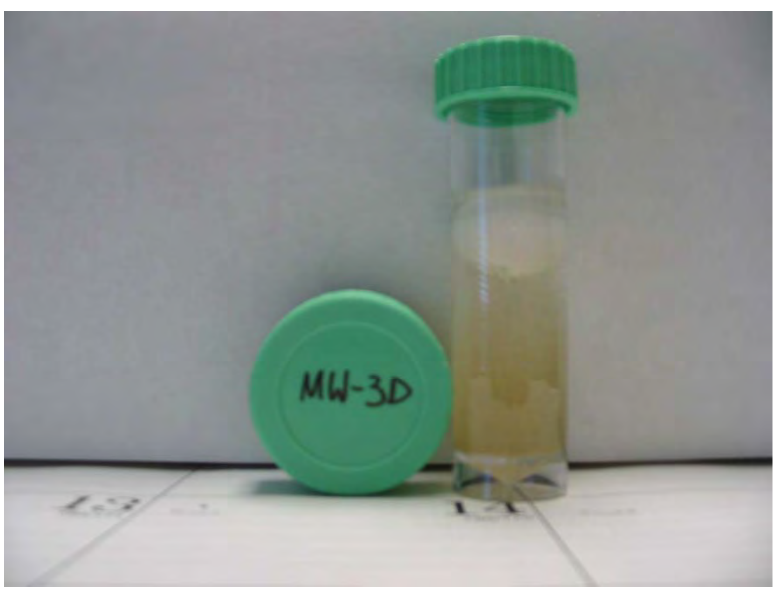


Photograph No.: 8	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1524	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-3D. The vial exhibits a negative result for nitrifying bacteria.			

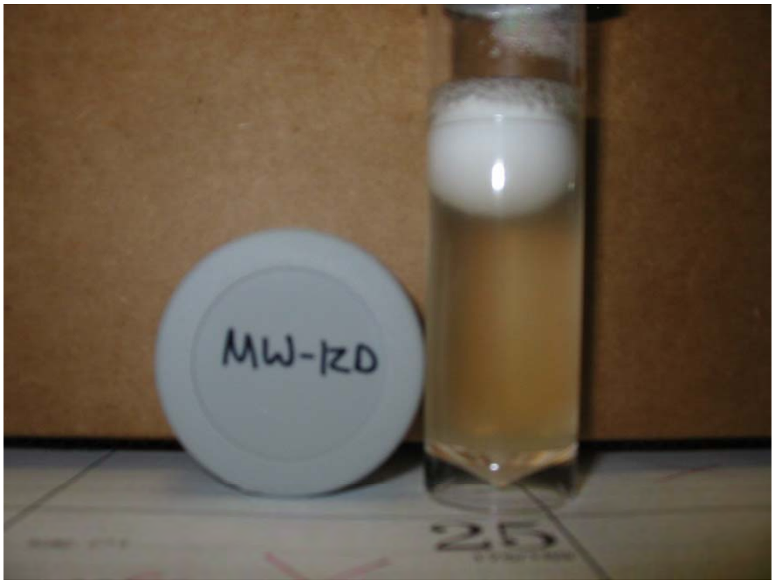
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 9	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1240	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-3D. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			



Photograph No.: 10	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1240	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-3D. The vial exhibits positive results for Slime-forming and dense slime bacteria.			



Photograph No.: 11	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1349	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-12D. The vial exhibits a positive result for denitrifying bacteria.			

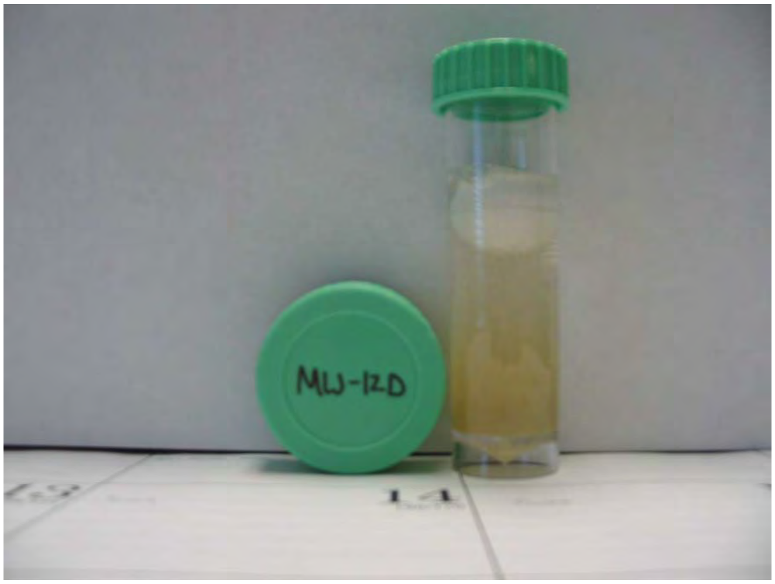
Photograph No.: 12	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1234	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-12D. The vial exhibits positive results for anaerobic and iron-related bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

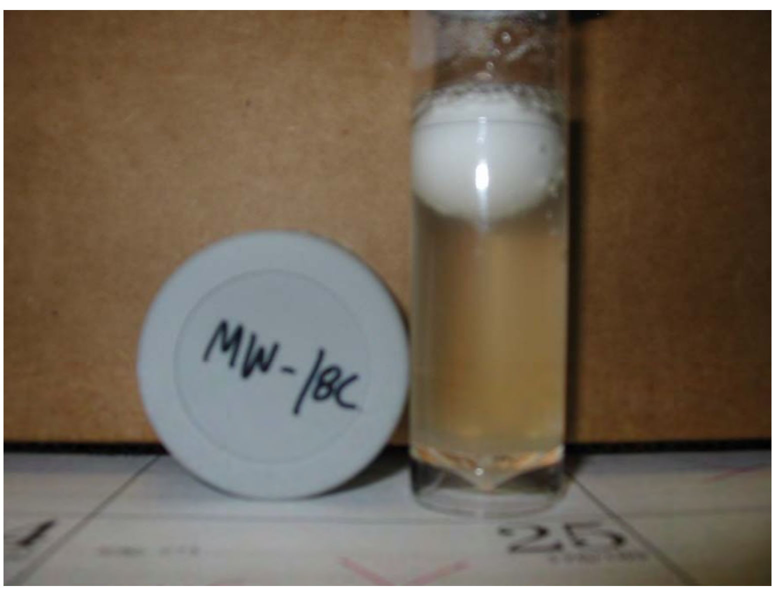
Photograph No.: 13	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1517	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-12D. The vial exhibits a positive (color change) result for nitrifying bacteria.			

Photograph No.: 14	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1234	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-12D. The vial exhibits a negative result for SRB.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

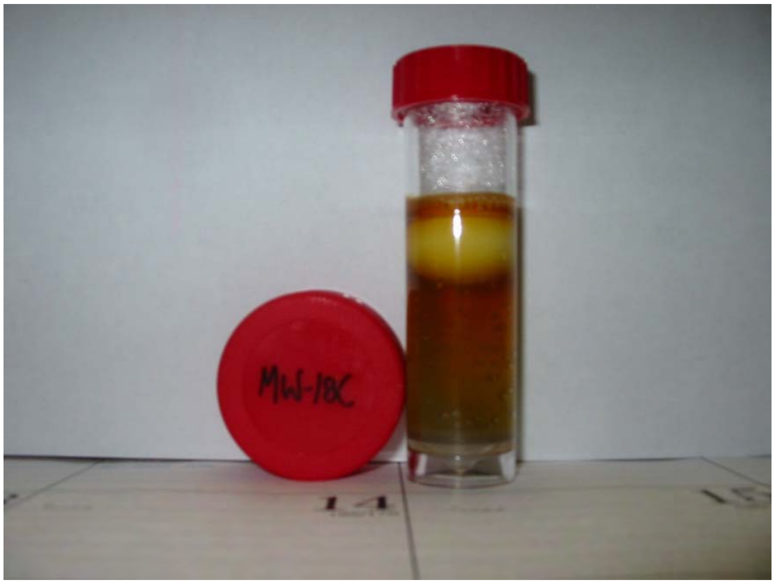


Photograph No.: 15	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1233	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-12D. The vial exhibits positive results for dense slime bacteria.			

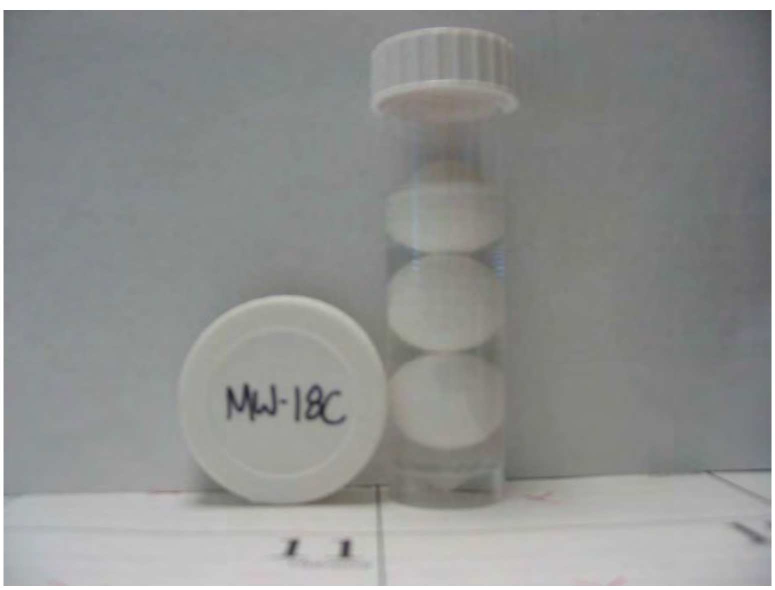


Photograph No.: 16	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1347	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-18C. The vial exhibits a positive result for denitrifying bacteria.			

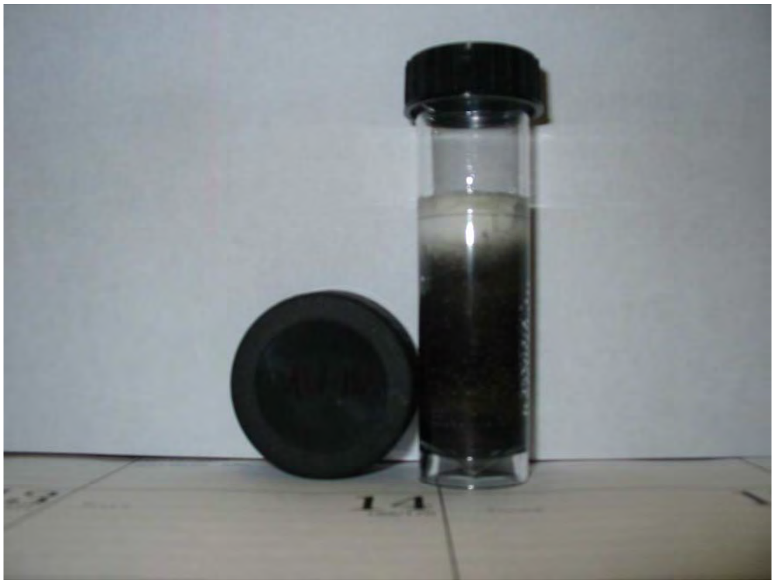
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



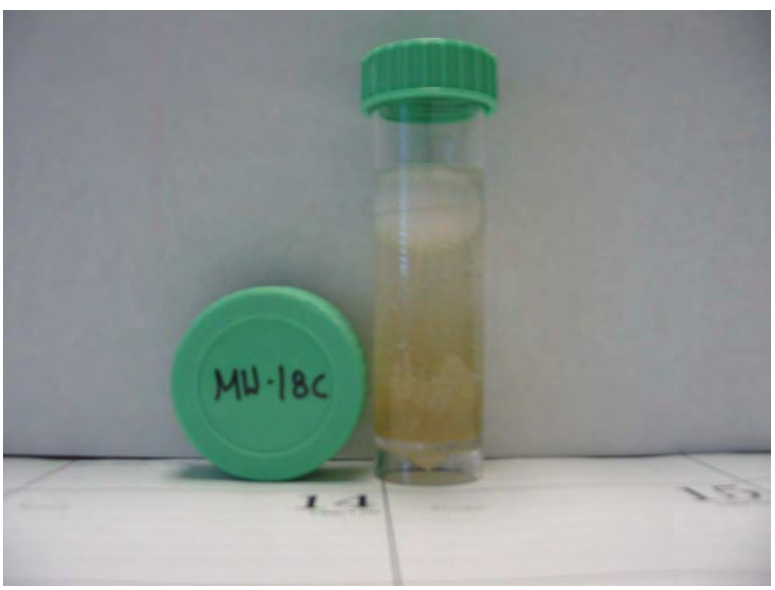
Photograph No.: 17	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1228	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-18C. The vial exhibits positive results for heterotrophic and iron-related bacteria.			



Photograph No.: 18	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1521	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-18C. The vial exhibits a negative result for nitrifying bacteria.			

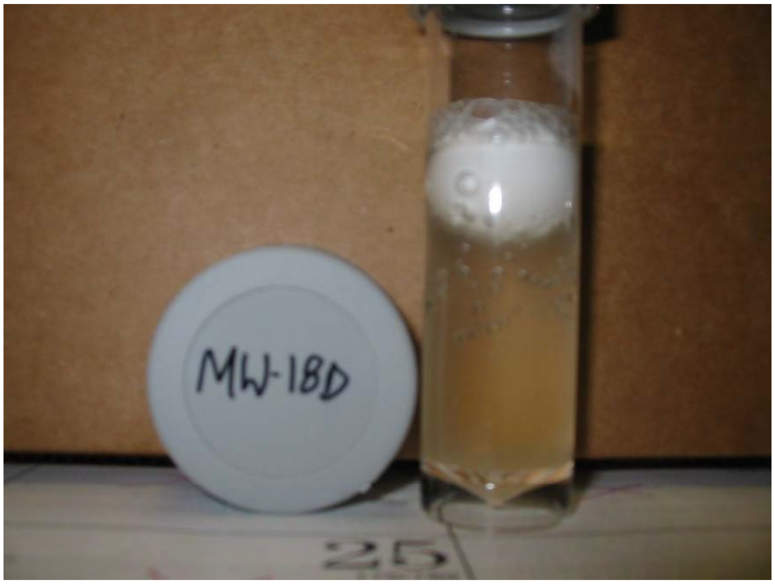


Photograph No.: 19	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1228	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-18C. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			



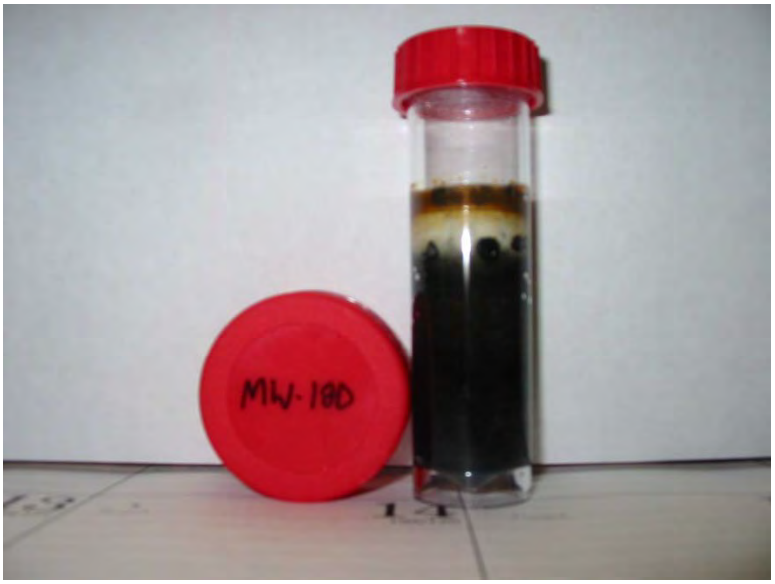
Photograph No.: 20	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1227	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-18C. The vial exhibits positive results for dense slime bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 21	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1353	Project No. EP9033.01.22.02.02

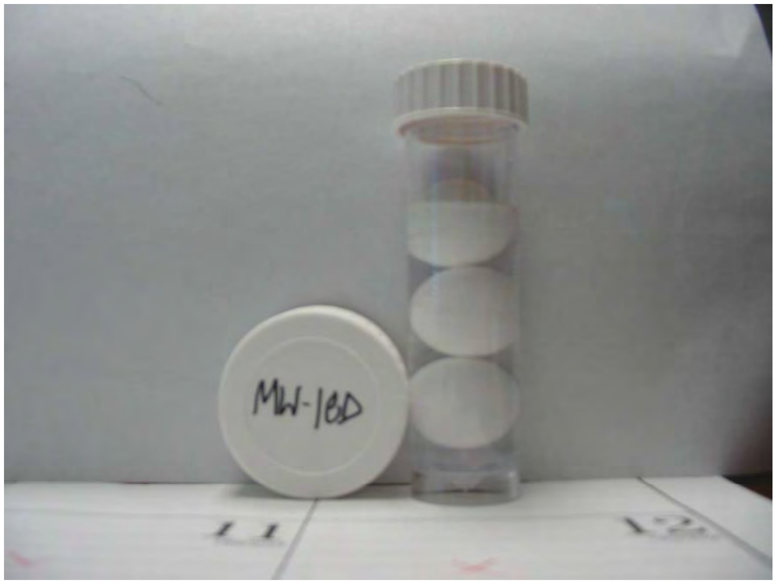
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-18D. The vial exhibits a negative result for denitrifying bacteria during the testing time. The positive reaction seen in the photo occurred after the test completed.



Photograph No.: 22	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: North	Time: 1245	Project No. EP9033.01.22.02.02

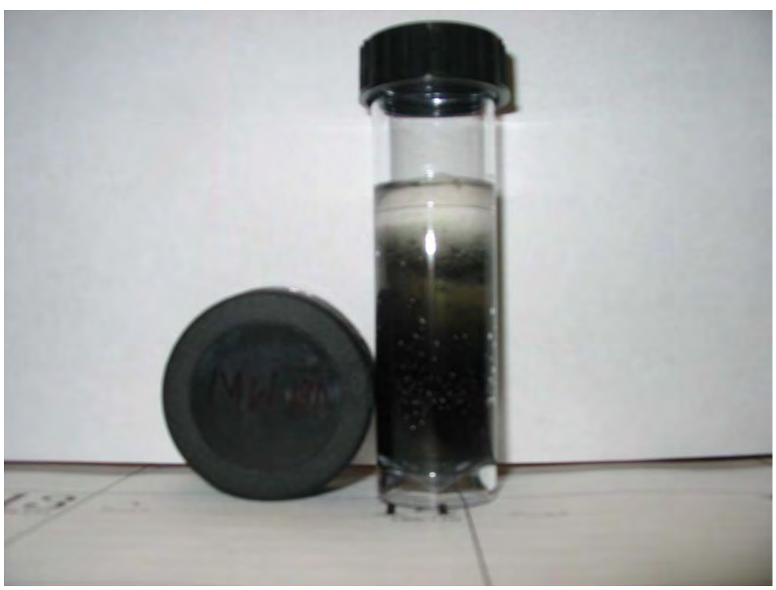
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-18D. The vial exhibits positive results for Pseudomonads and Enterics, anaerobic, heterotrophic and iron-related bacteria.

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 23	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1530	Project No. EP9033.01.22.02.02

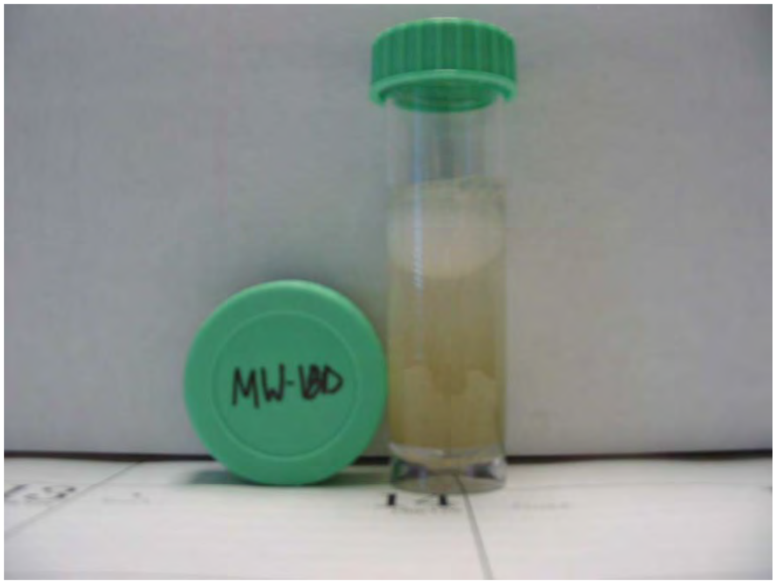
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-18D. The vial exhibits a negative result for nitrifying bacteria.



Photograph No.: 24	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1245	Project No. EP9033.01.22.02.02

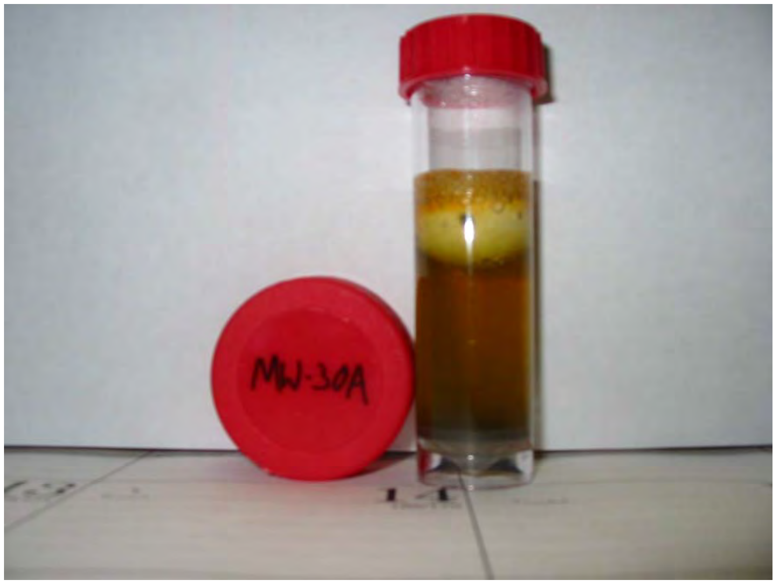
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-18D. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

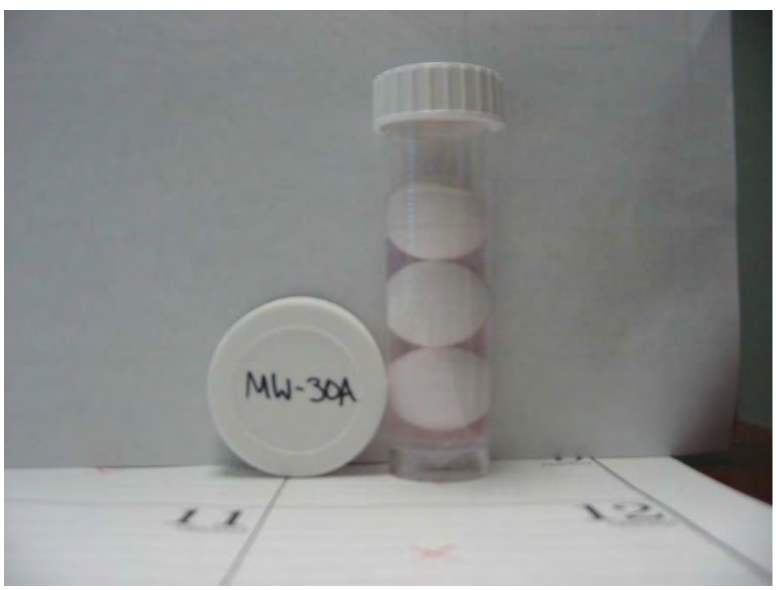


Photograph No.: 25	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1245	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-18D. The vial exhibits positive results for Slime-forming and dense slime bacteria.			

Photograph No.: 26	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1352	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-30A. The vial exhibits a positive result for denitrifying bacteria.			

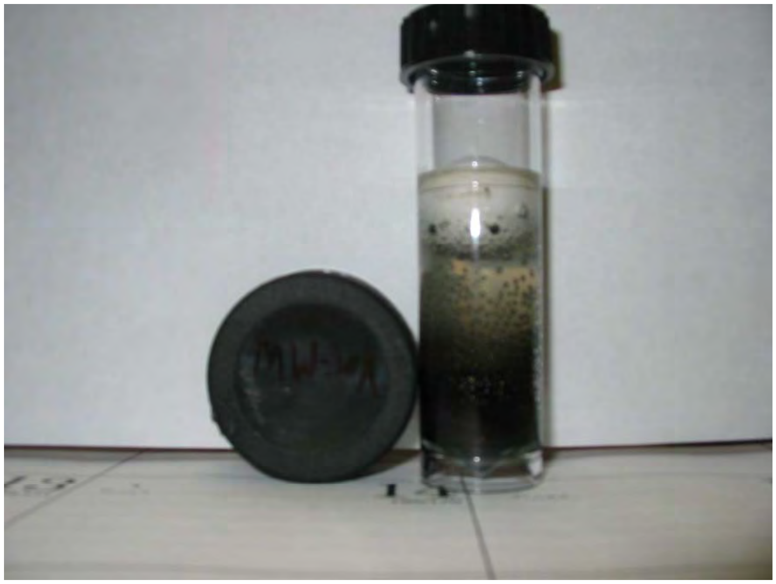


Photograph No.: 27	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1244	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-30A. The vial exhibits positive results for anaerobic, Enteric and iron-related bacteria.			

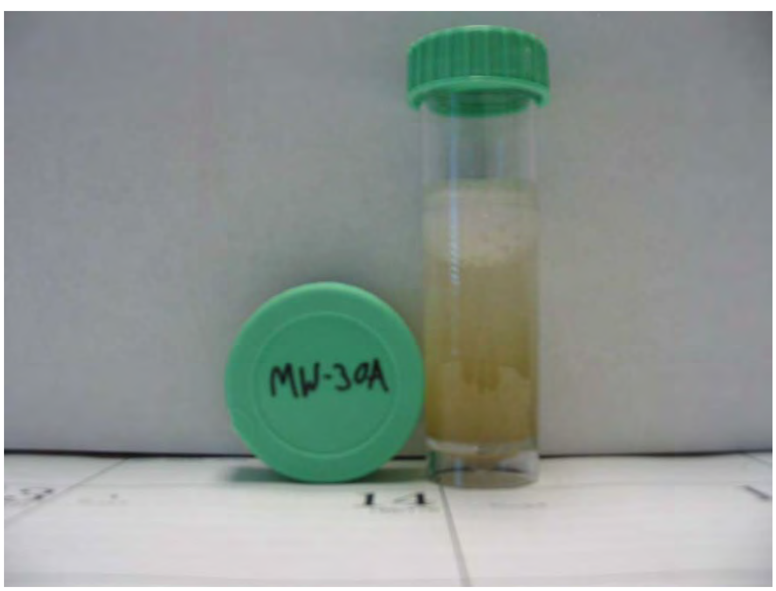


Photograph No.: 28	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1530	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-30A. The vial exhibits a positive result for nitrifying bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 29	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1244	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-30A. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			



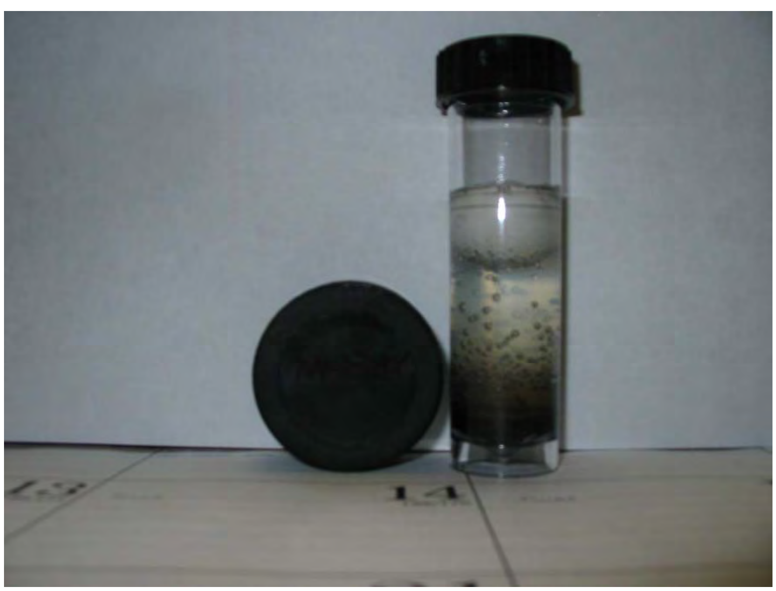
Photograph No.: 30	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1244	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-30A. The vial exhibits positive results for Slime-forming and dense slime bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

Photograph No.: 31	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1349	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-30C. The vial exhibits a negative result for denitrifying bacteria.			

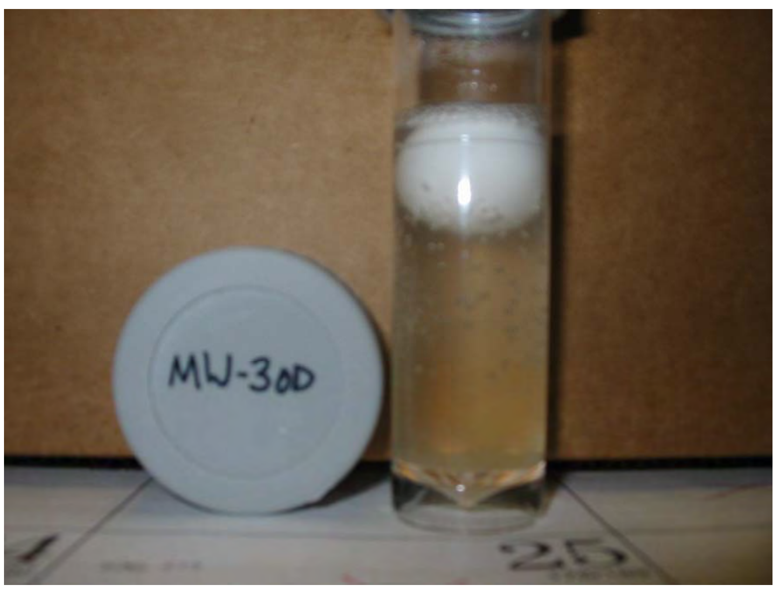
Photograph No.: 32	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1232	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-30C. The vial exhibits positive results for anaerobic, heterotrophic and iron-related bacteria.			

Photograph No.: 33	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1525	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-30C. The vial exhibits a negative result for nitrifying bacteria.			



Photograph No.: 34	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1232	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-30C. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			

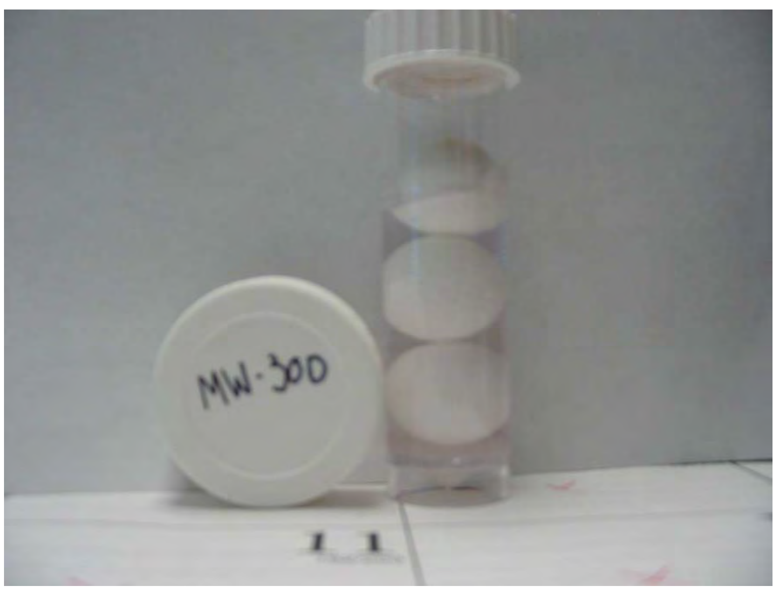
Photograph No.: 35	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1231	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-30C. The vial exhibits positive results for dense slime bacteria.			



Photograph No.: 36	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1348	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-30D. The vial exhibits a positive result for denitrifying bacteria.			

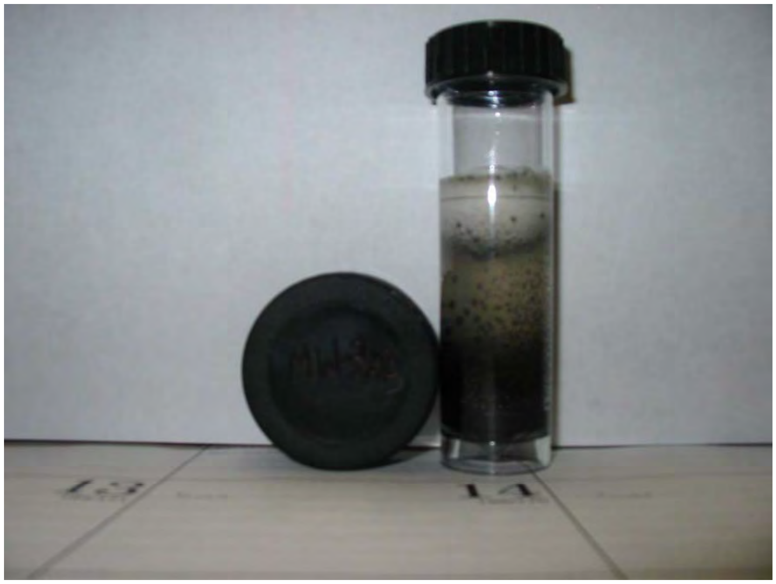
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

Photograph No.: 37	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1237	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-30D. The vial exhibits positive results for Pseudomonads and Enterics, anaerobic, heterotrophic and iron-related bacteria.			

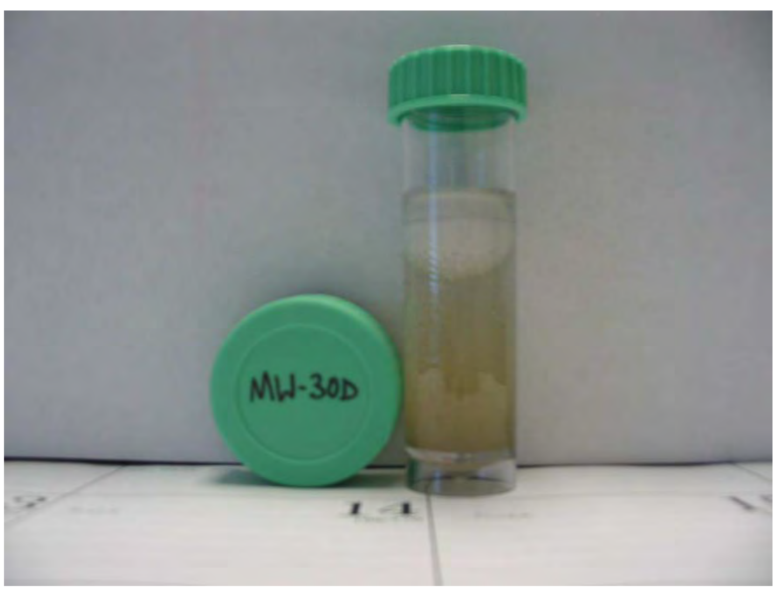


Photograph No.: 38	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1520	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-30D. The vial exhibits a negative result for nitrifying bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 39	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1236	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-30D. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			



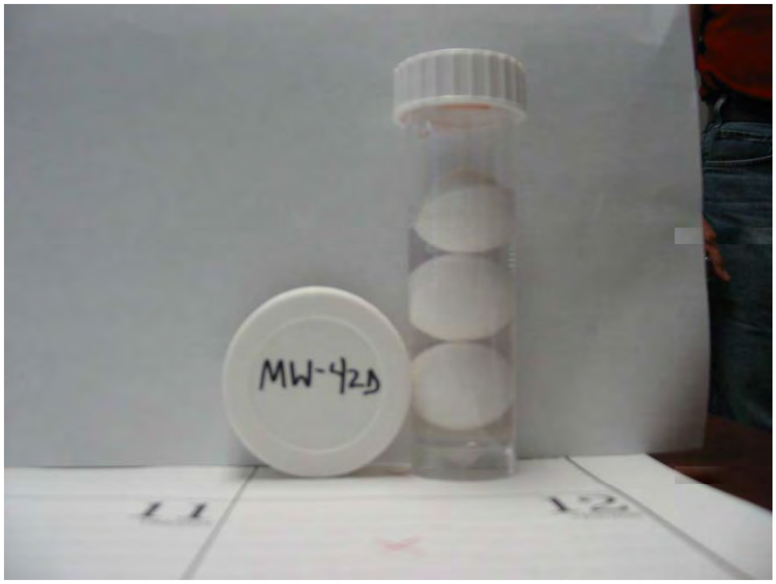
Photograph No.: 40	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1236	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-30D. The vial exhibits positive results for dense slime bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

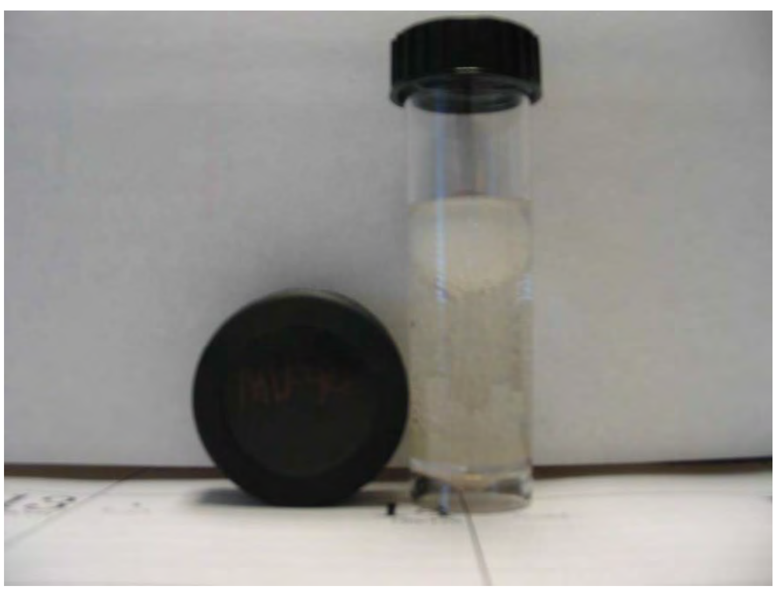
Photograph No.: 41	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1353	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-42D. The vial exhibits a positive result for denitrifying bacteria.			

Photograph No.: 42	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1246	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-42D. The vial exhibits positive results for anaerobic and iron-related bacteria.			

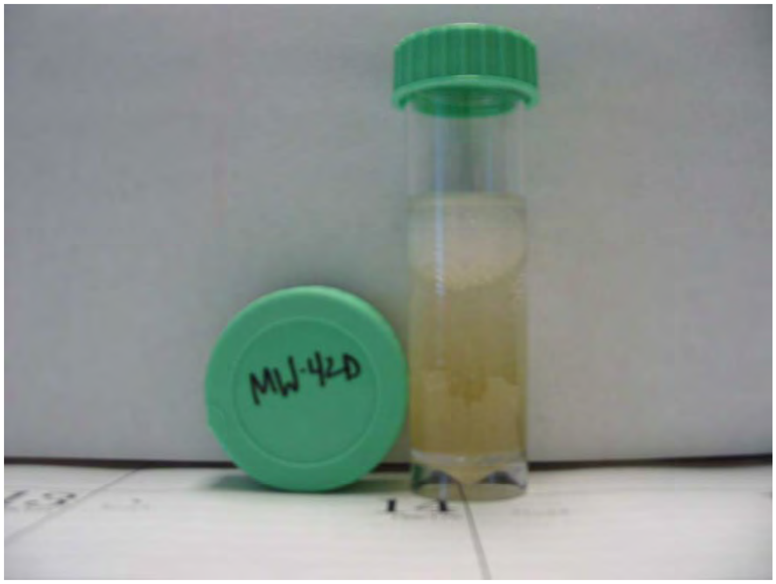
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 43	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1528	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-42D. The vial exhibits a negative result for nitrifying bacteria.			



Photograph No.: 44	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1246	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-42D. The vial exhibits a negative result for SRB.			

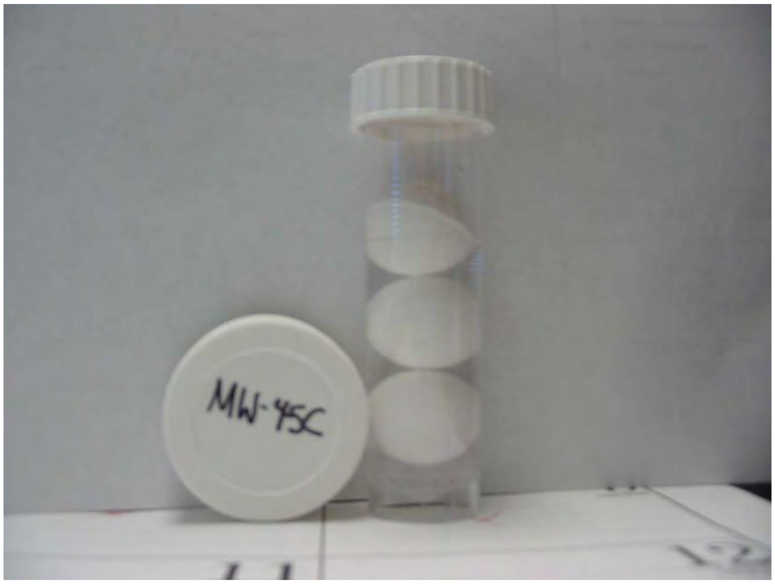


Photograph No.: 45	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1246	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-42D. The vial exhibits positive results for Slime-forming and dense slime bacteria.			

Photograph No.: 46	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1350	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-45C. The vial exhibits a positive result for denitrifying bacteria.			

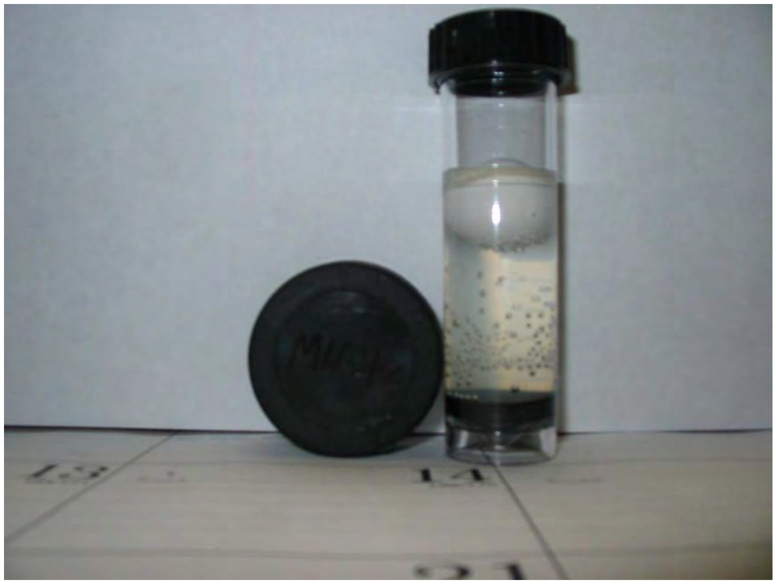
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska

Photograph No.: 47	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: North	Time: 1243	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-45C. The vial exhibits positive results for anaerobic and iron-related bacteria.			



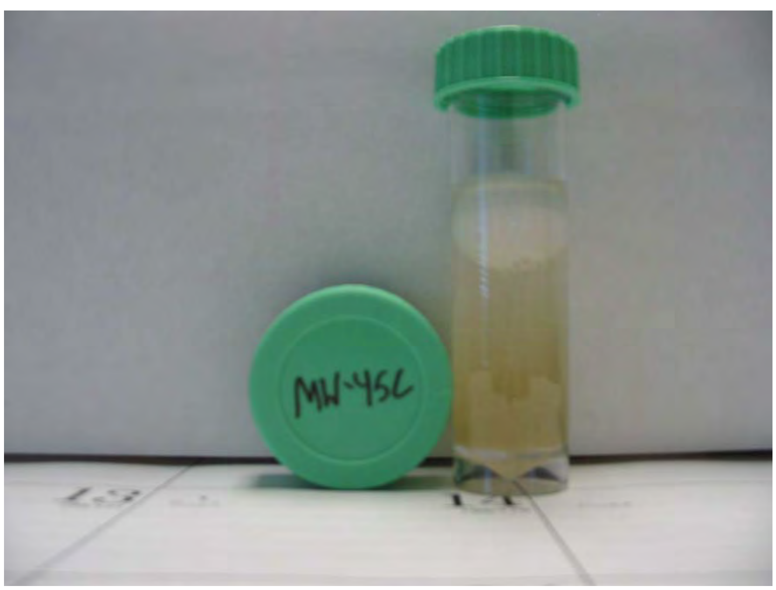
Photograph No.: 48	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1523	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-45C. The vial exhibits a negative result for nitrifying bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 49	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1242	Project No. EP9033.01.22.02.02

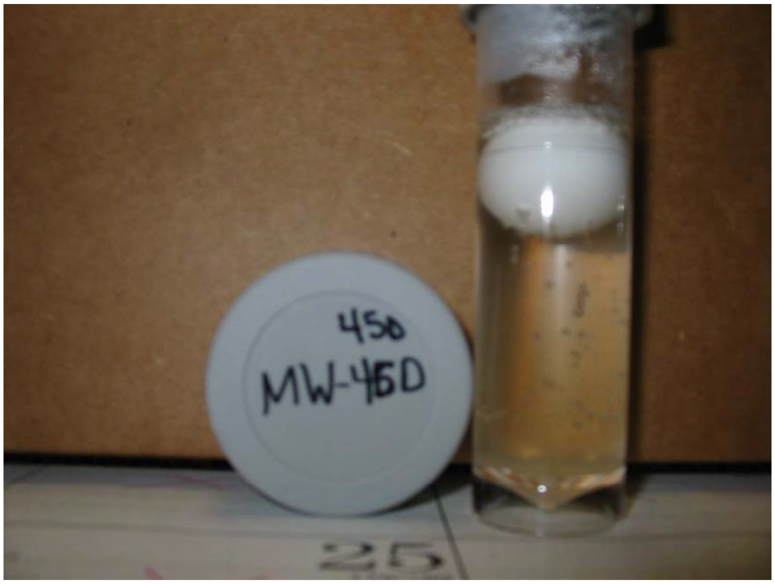
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-45C. The vial exhibits positive results for a dense anaerobic SRB consortium.



Photograph No.: 50	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1242	Project No. EP9033.01.22.02.02

Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-45C. The vial exhibits positive results for Slime-forming and dense slime bacteria.

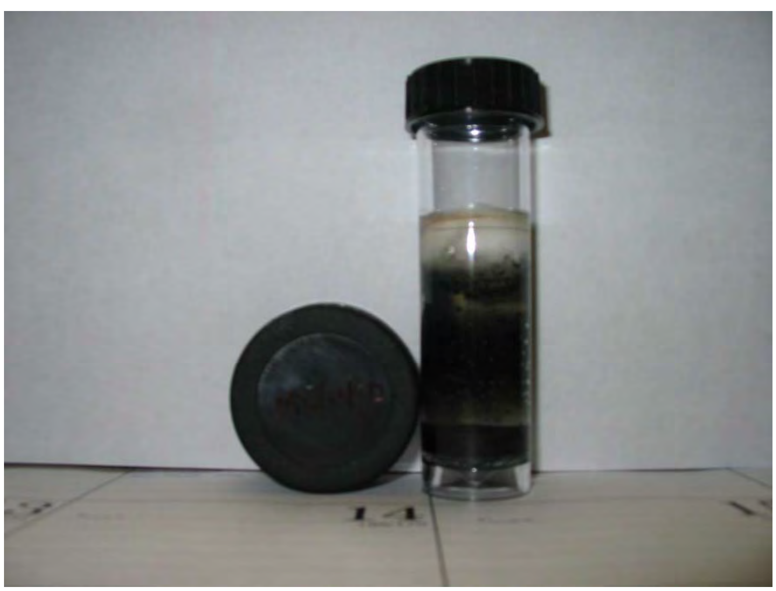
Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



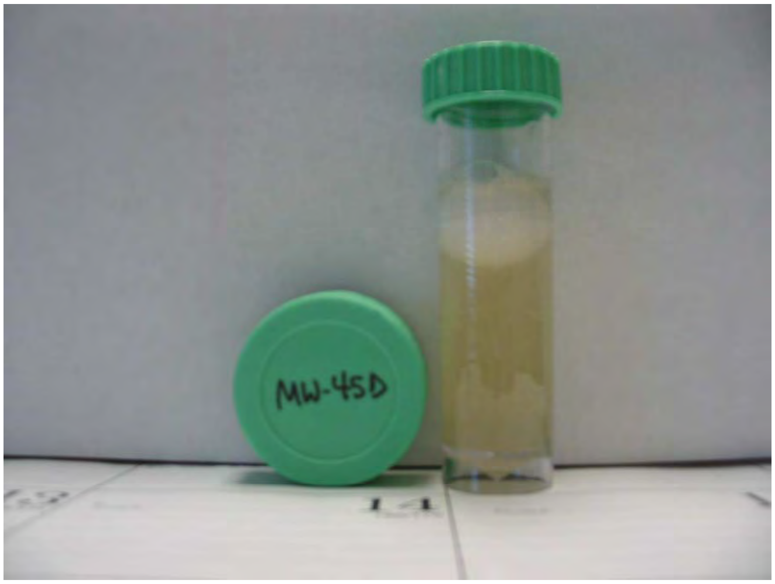
Photograph No.: 51	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1351	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-45D. The vial exhibits a positive result for denitrifying bacteria.			

Photograph No.: 52	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1230	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-45D. The vial exhibits positive results for Pseudomonads and Enterics, anaerobic and iron-related bacteria.			

Photograph No.: 53	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1526	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-45D. The vial exhibits a positive result for nitrifying bacteria.			



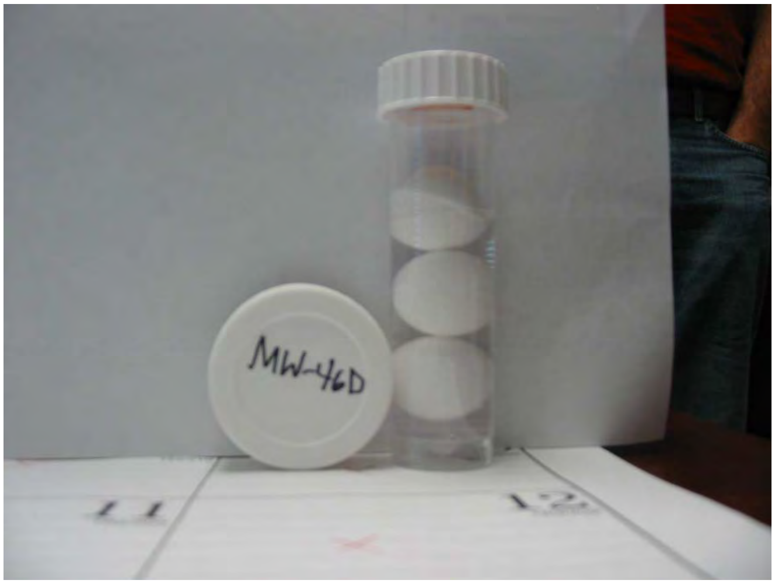
Photograph No.: 54	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1229	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-45D. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			



Photograph No.: 55	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1229	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-45D. The vial exhibits positive results for dense slime bacteria.			

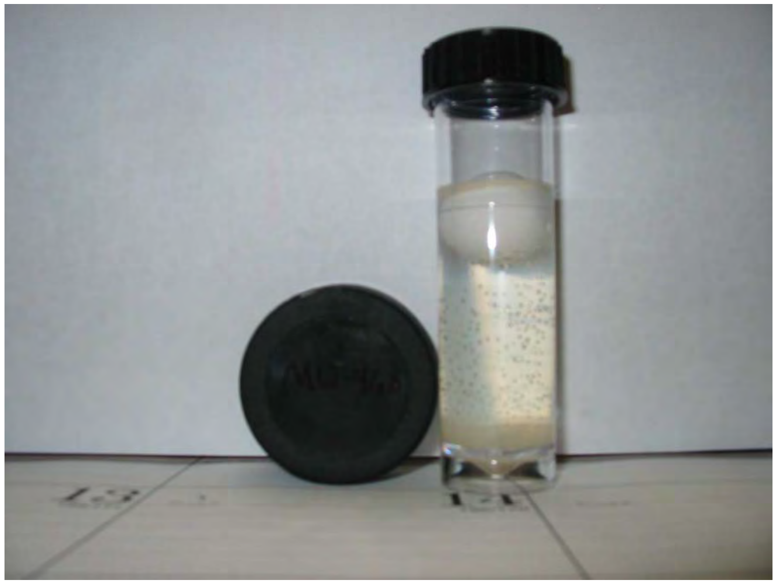
Photograph No.: 55	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1350	Project No. EP9033.01.22.02.02
Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-46D1. The vial exhibits a negative result for denitrifying bacteria.			

Photograph No.: 53	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1242	Project No. EP9033.01.22.02.02
Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-46D1. The vial exhibits positive results for anaerobic, heterotrophic and iron-related bacteria.			

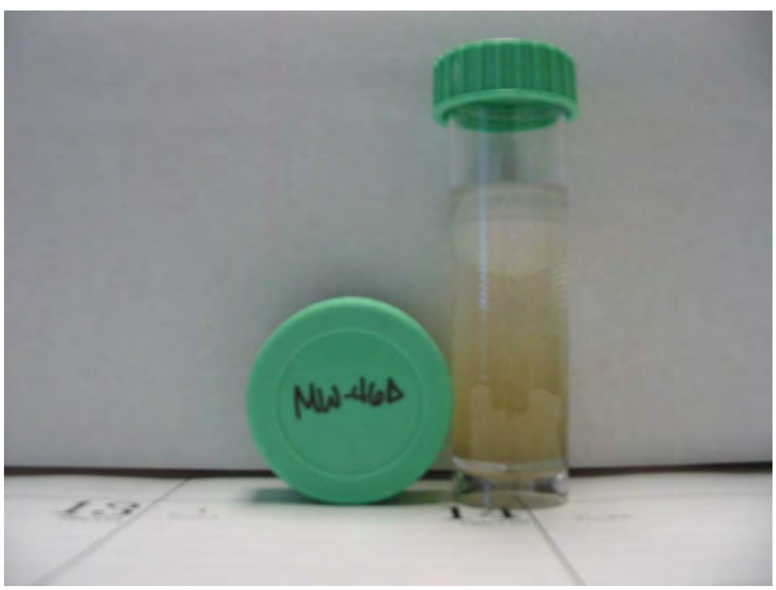


Photograph No.: 54	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1527	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-46D1. The vial exhibits a negative result for nitrifying bacteria.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



Photograph No.: 54	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1241	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-46D1. The vial exhibits negative results for SRB.			



Photograph No.: 53	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1241	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-46D1. The vial exhibits positive results for Slime-forming and dense slime bacteria.			

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<tr><td rowspan="2">Photograph No.: 54</td><td>Photographer: M. Schlegel</td><td>Date: 6/28/2010</td><td>Contract: EPA Region 7 AES</td></tr>
<tr><td>Direction: NA</td><td>Time: 1348</td><td>Project No. EP9033.01.22.02.02</td></tr>
<tr><td colspan="4">Description: The Denitrifying Bacteria (DN) BART kit vial at Day 5 for MW-46D2. The vial exhibits a positive result for denitrifying bacteria.</td></tr>
</table>

<table>
<tr><td rowspan="2">Photograph No.: 53</td><td>Photographer: M. Schlegel</td><td>Date: 7/2/2010</td><td>Contract: EPA Region 7 AES</td></tr>
<tr><td>Direction: NA</td><td>Time: 1236</td><td>Project No. EP9033.01.22.02.02</td></tr>
<tr><td colspan="4">Description: The Iron-Related Bacteria (IRB) BART kit vial at Day 9 for MW-46D2. The vial exhibits positive results for anaerobic, heterotrophic and iron-related bacteria.</td></tr>
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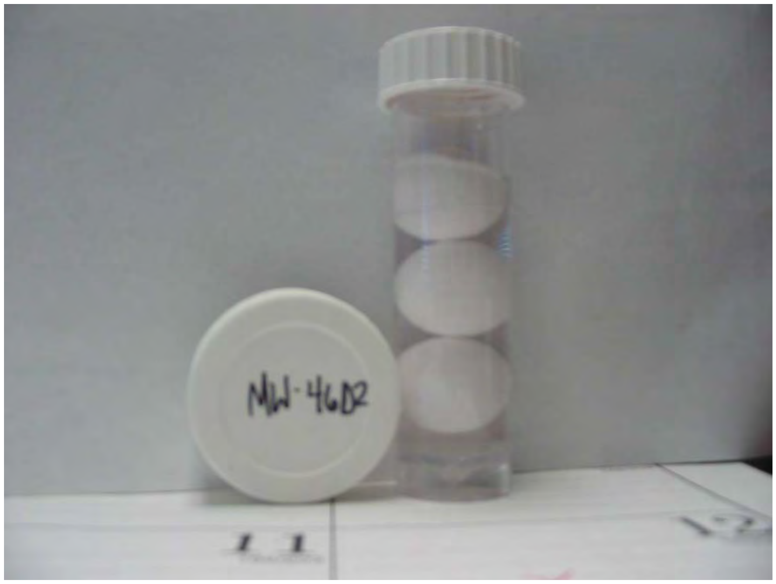
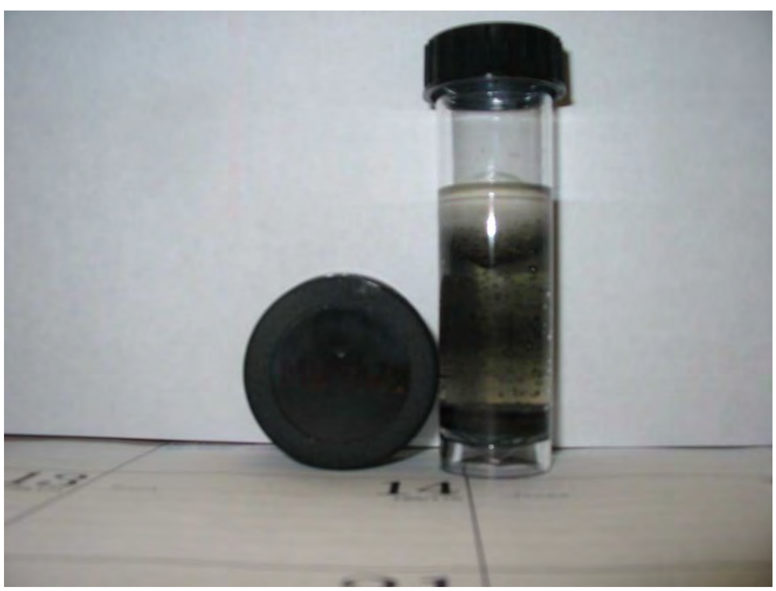
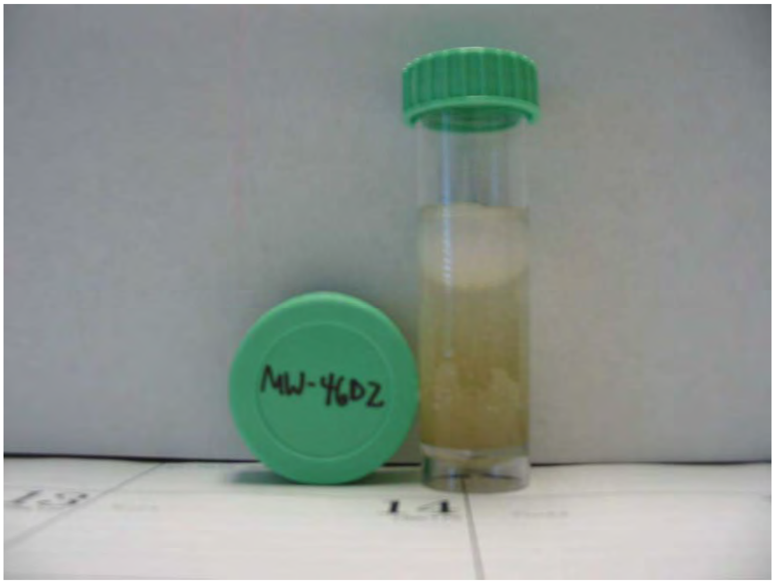


Photograph No.: 54	Photographer: M. Schlegel	Date: 6/28/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1521	Project No. EP9033.01.22.02.02
Description: The Nitrifying Bacteria (N) BART kit vial at Day 5 for MW-46D2. The vial exhibits a negative result for nitrifying bacteria.			



Photograph No.: 53	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1235	Project No. EP9033.01.22.02.02
Description: The Sulfate-Reducing Bacteria (SRB) BART kit vial at Day 9 for MW-46D2. The vial exhibits positive results for a combination of aerobic and anaerobic SRB.			

Garvey Grain Elevator BART Kit Results
Hastings, Nebraska



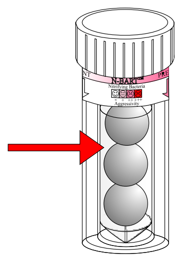
Photograph No.: 54	Photographer: M. Schlegel	Date: 7/2/2010	Contract: EPA Region 7 AES
	Direction: NA	Time: 1235	Project No. EP9033.01.22.02.02
Description: The Slime-Forming Bacteria (SLYM) BART kit vial at Day 5 for MW-46D2. The vial exhibits positive results for Slime-forming and dense slime bacteria.			

BART™ TEST FOR N NITRIFYING BACTERIA

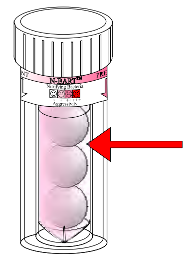
Present/Absent - observe at day 5.

ABSENT
(Negative - Non-aggressive)

<u>NO</u> pink solution.



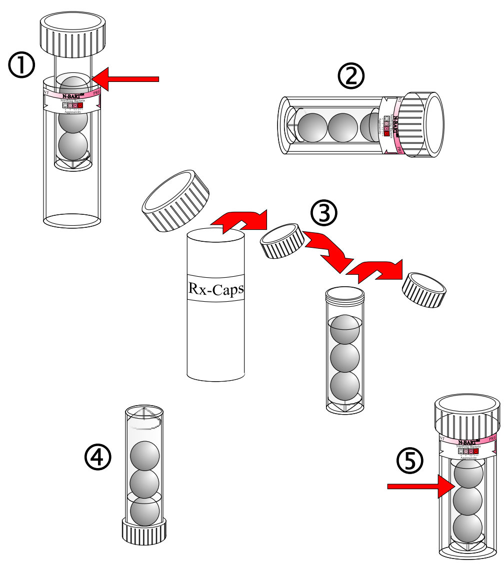
PRESENT
(Positive - Aggressive)



Solution pink.

*<u>Note</u>: Refer to page bottom for approximate population

N-BART Instructions.



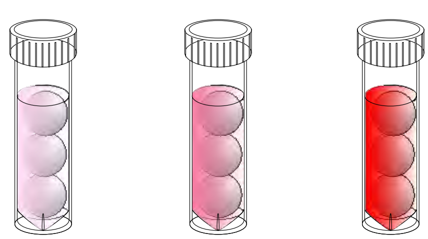
1. Remove inner vial and add water sample to fill line.

2. Replace inner vial and place on side for 5 days.

3. On day 5 of test remove the inner test vial from the outer and replace cap with cap from Rx tube.

4. Invert tube for 3 minutes and return upright to outer tube.

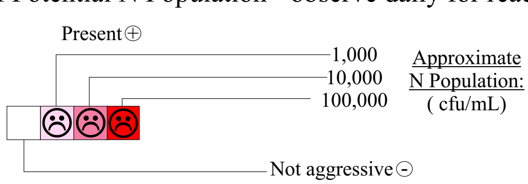
5. After 3 hours observe for pink color change.



1,000 10,000 100,000

Approximate N Population:(cfu/mL)

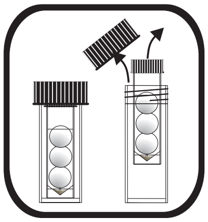
Determination of Potential N Population - observe daily for reaction.



N-BART™

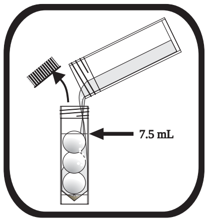
Nitrifying bacteria recycle organic nitrogenous materials from ammonium (the endpoint for the decomposition of proteins) to nitrates. In water, aggressive nitrifiers can produce high concentrations of nitrates.

Nitrates in water can be a potential health risk, particularly to infants who have not yet developed a tolerance to nitrates. Aggressive nitrifying bacteria in waters may indicate the latter stages of aerobic degradation of nitrogen-rich organic matter. This can indicate that the water may have been polluted by nitrogen-rich organics from sources such as compromised septic tanks, sewage systems, industrial and hazardous waste sites and is undergoing an aerobic form of degradation.

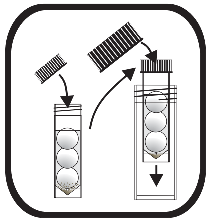


1. Remove the inner tube from the outer tube.

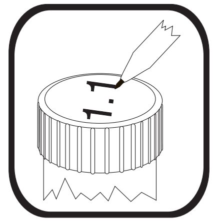
2. Using the outer tube from the BART, or a different sterile container, collect at least 20 mL of sample. ***Note:*** *Do not touch or contaminate the inside of the tube or lid. Use aseptic technique.*



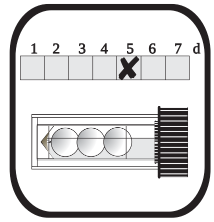
3. Fill the inner tube with sample until the level reaches the fill line. ***Note:*** *After removing the cap from the inner tube, set it down directly on a* ***clean surface****. To avoid contamination, do not invert the cap.*



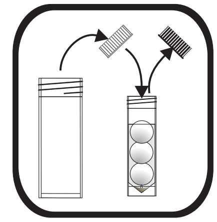
4. Tightly screw the cap back on the inner tube. Return the inner tube to the outer tube and screw the outer cap on tightly. Allow the medium to dissolve slowly, and the ball to rise at its own speed. DO NOT SHAKE OR SWIRL THE TUBE.



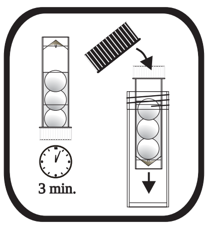
5. Label the outer tube with the date and sample origin.



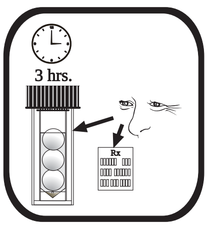
6. Place the BART tube on its side away from direct sunlight for five days at room temperature (21 to 25°C).



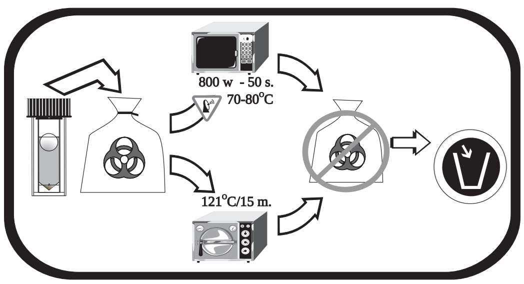
7. After five days, return the tube to a vertical position. Remove the white cap from the inner tube and replace with a Reactor Cap from the white supply tube. Screw the Reactor Cap on tightly.



8. Invert tube for three minutes to allow the reagents in the Reactor Cap to mix with the solution. Return tube to a vertical position and replace to outer tube.



9. Let tube for 3 hours. Read the reaction. Compare the observed reactions on the Reaction Comparator Chart.



10. Safely dispose using a dedicated microwave oven or by autoclave.

Certificate of Analysis

This certificate confirms that the BART™ product listed by name, lot number, and batch number has been subjected to the full range of Quality Control procedures as outlined in “User Quality Control Manual in support of the BART Biodetection Technologies” published in 2004 by Droycon Bioconcepts Inc.

BART™ Type: N-BART

Batch #:

Release date*:

Lot#:

Shipment date:

Expiry date:

* Approval for release includes the following criteria: 1. confirmation of sterility for the vials and caps, 2. approval of the medium pellet as being appropriately formed and acceptable, 3. is sterile, and 4. responds in a typical way to inoculation and incubation using selected defined microbial cultures. Details of these criteria are included in our Web Site.

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Certificate Number:

This certificate was issued by Droycon Bioconcepts Inc., 315 Dewdney Ave., Regina, SK., Canada, S4N 0E7 as an assurance that the product listed above has passed through the quality control procedures considered essential to the successful use of the testing device.

ISO 9001:2000
Registered

For more information, visit our web-site at:
http://www.DBI.ca

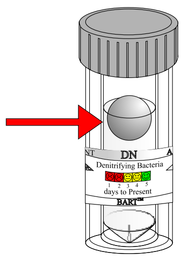
BART™ TEST FOR DN DENITRIFYING BACTERIA

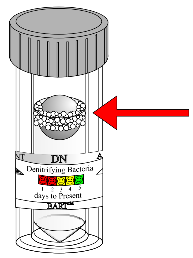
Present/Absent - observe daily for 4 days.

ABSENT
(Negative - Non-aggressive)

PRESENT
(Positive - Aggressive)

<u>NO</u> Foam around ball.





Foam around ball.

1. View test each day for 4 days.
2. Observe any growths.
3. Compare with description.

*<u>Note</u>: Refer to page bottom for approximate population

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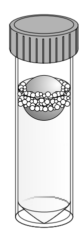
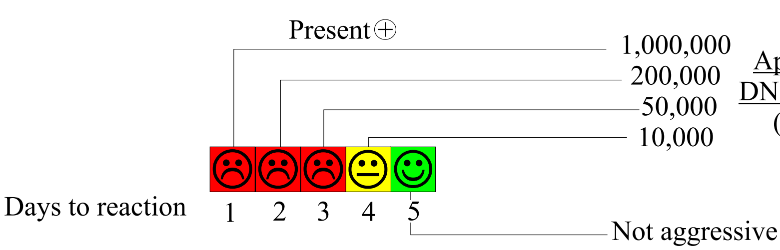
Advanced test information.

Determination of Dominant Bacteria



FOAM around ball **(FO)** - Denitrifying Bacteria.

Determination of Potential DN Population - observe daily for reaction.

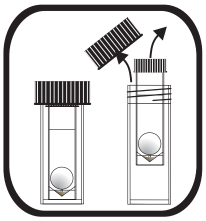


<u>Approximate DN Population:</u>
(cfu/mL)

Made in Canada

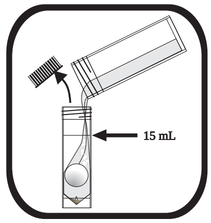
DN-BART™
For water and wastewater

Denitrifying bacteria indicate the decomposition of waste organic nitrogenous materials. These bacteria reduce nitrate to nitrite and some continue nitrification to gaseous nitrogen (complete denitrification). In water, aggressive denitrifiers can indicate high concentrations of nitrates, and that the sample is probably anaerobic and relatively rich in organic matter. The presence of denitrifying bacteria can indicate that the water has been polluted by nitrogen-rich organics from sources such as compromised septic tanks, sewage systems, industrial and hazardous waste sites. If highly aggressive bacteria are detected, the water should be tested for the presence of coliform bacteria.

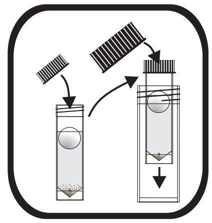


1. Remove the inner tube from the outer tube.

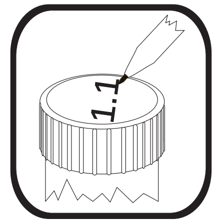
2. Using the outer tube from the BART, or a different sterile container, collect at least 20 mL of sample.
Note: *Do not touch or contaminate the inside of the tube or lid. Use aseptic technique.*



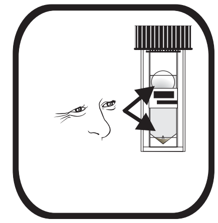
3. Fill the inner tube with sample until the level reaches the fill line.
Note: *After removing the cap from the inner tube, set it down directly on a* ***clean surface****. To avoid contamination, do not invert the cap.*



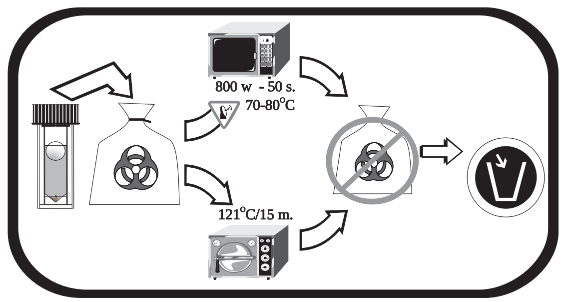
4. Tightly screw the cap back on the inner tube. Return the inner tube to the outer tube and screw the outer cap on tightly. Allow the medium to dissolve slowly, and the ball to rise at its own speed. DO NOT SHAKE OR SWIRL THE TUBE.



5. Label the outer tube with the date and sample origin.



6. Place the BART tube away from direct sunlight and allow to incubate at room temperature. Check the BART visually for reaction daily.



7. Safely dispose using a dedicated microwave oven or by autoclave.

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BART™ Type: DN-BART	Batch #:
Release date*:	Lot#:
Shipment date:	Expiry date:

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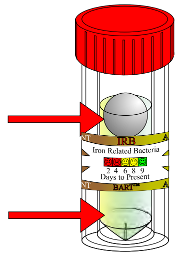
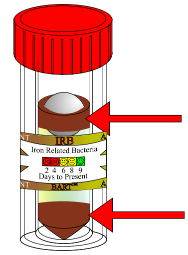
BART™ TEST FOR IRB
IRON RELATED BACTERIA

Present/Absent - observe daily for 8 days.

ABSENT (Negative - Non-aggressive)	PRESENT (Positive - Aggressive)

The solution has NO brown slime.





A **Brown** slime ring or foam around the ball,

and/or

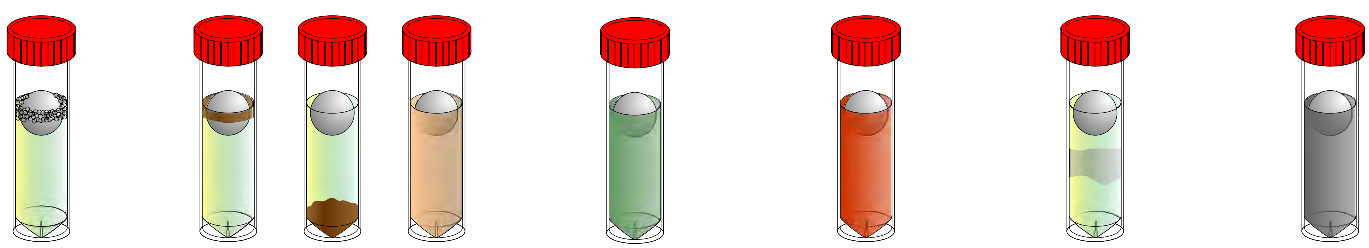
A **Brown** slime growth at the base of tube.

1. View test each day for 8 days.
2. Observe any growths/color changes.
3. Compare with descriptions.

*Note: Refer to page bottom for approximate population

Advanced test information.

Determination of Dominant Bacteria



FO BR BG BC GC RC CL BL

FOAM**(FO)** around ball - Anaerobic Bacteria.

BROWN RINGS**(BR)**, GEL**(BG)**, and/or CLOUDS**(BC)** - IRB.

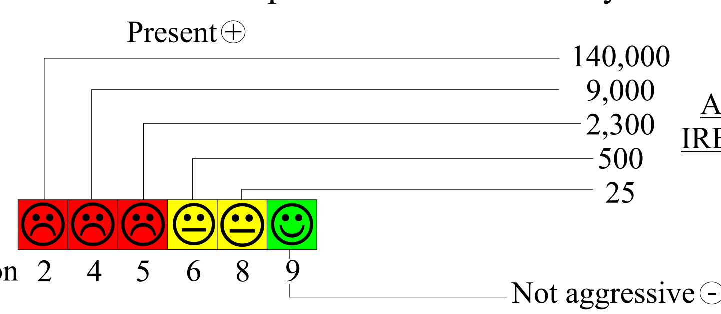
Solution GREEN-CLOUDY**(GC)** - Pseudomonads.

Solution RED-CLOUDY**(RC)** - Enteric Bacteria.

Solution CLOUDY**(CL)** - Heterotrophic Bacteria.

Solution BLACK**(BL)** - Pseudomonads and Enterics.

Determination of Potential IRB Population - observe daily for reaction.

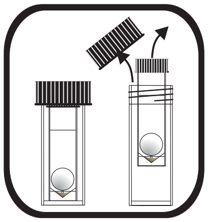


Approximate IRB Population: (cfu/mL)

Made in Canada

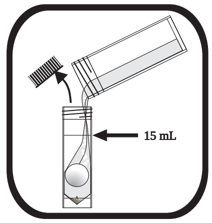
IRB-BART™
For water and wastewater

Iron-Related bacteria are difficult to enumerate because they are subdivided into several groupings (e.g., iron-oxidizing and iron-reducing bacteria). Iron-related bacteria can use iron in their metabolism. Taste and odor problems and “red water” are common symptoms of problems due to iron-related bacteria. These bacteria function under different reduction-oxidation (redox) conditions and use a variety of substrates for growth. The IRB-BARTs can detect both iron-oxidizing and iron-reducing bacteria. Common iron-related bacteria include *Gallionella*, *Crenothrix*, *Sphaerotilus*, *Siderocapsa*, and *Thiobacillus ferroxidans*.

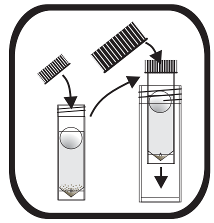


1. Remove the inner tube from the outer tube.

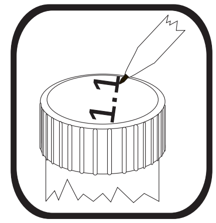
2. Using the outer tube from the BART, or a different sterile container, collect at least 20 mL of sample.
Note: *Do not touch or contaminate the inside of the tube or lid. Use aseptic technique.*



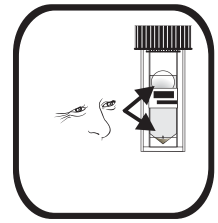
3. Fill the inner tube with sample until the level reaches the fill line.
Note: *After removing the cap from the inner tube, set it down directly on a* ***clean surface****. To avoid contamination, do not invert the cap.*



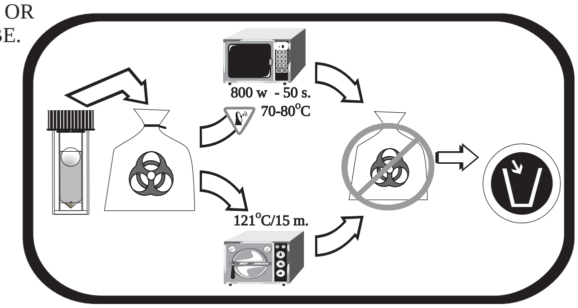
4. Tightly screw the cap back on the inner tube. Return the inner tube to the outer tube and screw the outer cap on tightly. Allow the medium to dissolve slowly, and the ball to rise at its own speed. DO NOT SHAKE OR SWIRL THE TUBE.



5. Label the outer tube with the date and sample origin.



6. Place the BART tube away from direct sunlight and allow to incubate at room temperature. Check the BART visually for reaction daily.



7. Safely dispose using a dedicated microwave oven or by autoclave.

Certificate of Analysis

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BART™ Type: IRB-BART	Batch #:
Release date*:	Lot#:
Shipment date:	Expiry date:

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Registered

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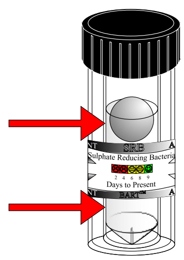
BART™ TEST FOR SRB
SULFATE REDUCING BACTERIA

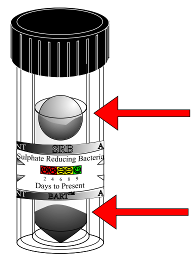
Present/Absent - observe daily for 8 days.

ABSENT
(Negative - Non-aggressive)

The solution has NO black slime.



PRESENT
(Positive - Aggressive)



A **Black** slime ring beneath the ball,

and/or

A **Black** slime growth at the base of tube.

1. View test each day for up to 15 days.

2. Observe any growths/color changes.

3. Compare with description(s).

*Note: Refer to page bottom for approximate population

Advanced test information.

Determination of Dominant Bacteria

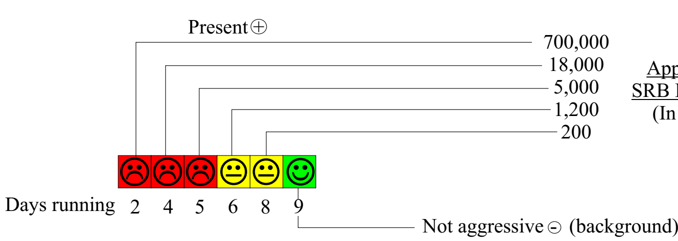
BLACK only in BASE**(BB)** - Dense anaerobic SRB consortium.

BLACK only around BALL/TOP**(BT)** - Aerobic SRB consortium.

BLACK in BASE and around BALL - Combination of aerobic**(BT)** and anaerobic**(BB)** SRB.

Solution CLOUDY - Anaerobic bacteria present.

Determination of Potential SRB Population - observe daily for reaction.



Made in Canada

SRB-BART™ Technical Advisory

This advisory notifies users of the SRB-BART system for the detection of sulphate reducing bacteria that the standard maximum length for the monitoring of the reaction patterns is commonly ten (10) days. Operators using the SRB-BART tester for the detection of deep-seated SRB infestations in water systems associated with wells and distribution system may find it advantageous to continue observations until the fifteenth (15th) day. This is because some SRB do not exhibit reaction patterns (i.e. BT, BB or BA) until after other bacterial consortia have already grown within the tester (e.g. anaerobic bacteria). This delays the observation of a positive detection for the SRB. In water pipelines and biofouling water wells the time lags can be delayed until days 11 to 15. It is not possible to project the size of the SRB population but this extension of the testing period can be used to determine the presence / absence of the SRB when they are present in environments either in very low numbers or in a consortial association with other microbial species. It can be expected that where routine monitoring is being undertaken, sudden decreases in the time lags to 10 days or less can be taken to indicate that the SRB are becoming significantly more aggressive and may require corrective action (e.g. disinfection, pigging the lines etc).

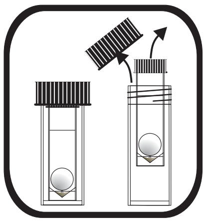
Please submit any comments and concerns to: drc@dbi.ca

SRB-BART™

For water and wastewater

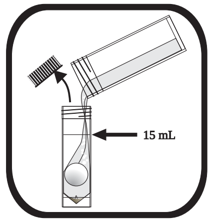
Sulfate-Reducing bacteria are a group of anaerobic bacteria that generate hydrogen sulfide (H_2S). This product can cause a number of significant problems in water. Problems range from “rotten egg” odors to the blackening of equipment, slime formations, and the initiation of corrosive processes. SRB microorganisms are difficult to detect because they are anaerobic and tend to grow deep down within biofilms (slimes) as a part of a microbial community. SRB may not be present in the free-flowing water over the site of the fouling.

If SRB activity is present in the BART, sulfate is reduced to H_2S, which reacts with the diffusing ferrous iron to form black iron sulfide. This sulfide commonly forms either in the base (as black precipitates) and/or around the ball (as an irregular black ring).

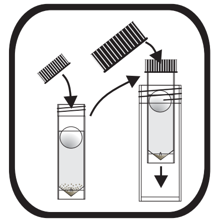


1. Remove the inner tube from the outer tube.

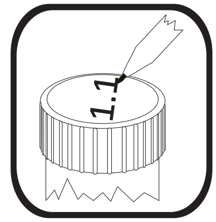
2. Using the outer tube from the BART, or a different sterile container, collect at least 20 mL of sample.
Note: *Do not touch or contaminate the inside of the tube or lid. Use aseptic technique.*



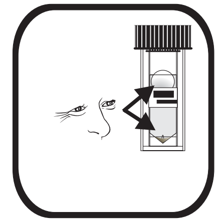
3. Fill the inner tube with sample until the level reaches the fill line.
Note: *After removing the cap from the inner tube, set it down directly on a* ***clean surface****. To avoid contamination, do not invert the cap.*



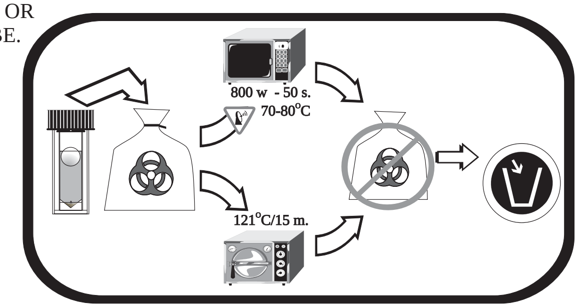
4. Tightly screw the cap back on the inner tube. Return the inner tube to the outer tube and screw the outer cap on tightly. Allow the medium to dissolve slowly, and the ball to rise at its own speed. DO NOT SHAKE OR SWIRL THE TUBE.



5. Label the outer tube with the date and sample origin.



6. Place the BART tube away from direct sunlight and allow to incubate at room temperature. Check the BART visually for reaction daily.



7. Safely dispose using a dedicated microwave oven or by autoclave.

Certificate of Analysis

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BART™ Type: SRB-BART

Batch #:

Release date*:

Lot#:

Shipment date:

Expiry date:

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Registered

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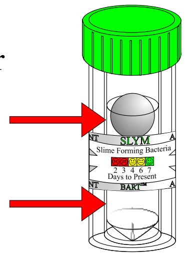
BART™ TEST FOR SLYM
SLIME FORMING BACTERIA

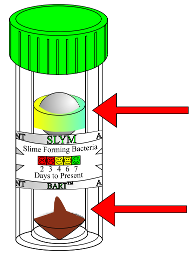
Present/Absent - observe daily for 8 days.

ABSENT
(Negative - Non-aggressive)

The solution remains clear (not cloudy) with NO slime or glowing under U.V.



PRESENT
(Positive - Aggressive)



Cloudy solution, Glowing ring around ball under U.V. Light,

and/or

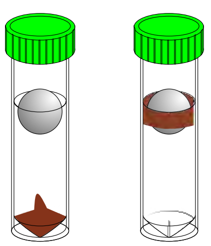
Slime growth at base of tube.

1. View test each day for 8 days.
2. Observe any growths/color changes.
3. Compare with description(s).

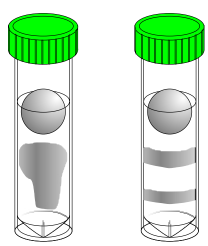
*Note: Refer to page bottom for approximate population

Advanced test information.

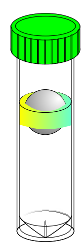
Determination of Dominant Bacteria



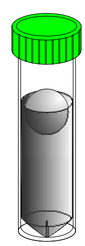
DENSE SLIME**(DS)** in base or SLIME RING**(SR)** around ball- Dense Slime Bacteria.



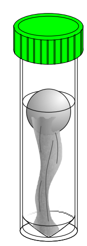
CLOUDY**(CL)** growth or LAYERED PLATES**(CP)**- Slime Forming Bacteria.



PALE BLUE GLOWING**(PB)** around ball(U.V. light) - Fluorescing Pseudomonads.

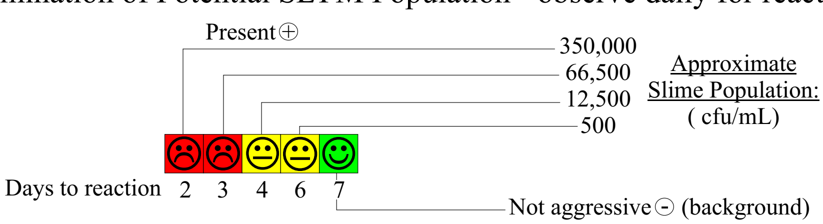


BLACKENED LIQUID**(BL)** - Pseudomonads and Enterics.



THREAD-LIKE STRANDS**(TH)** - Tight Slime Bacteria.

Determination of Potential SLYM Population - observe daily for reaction.

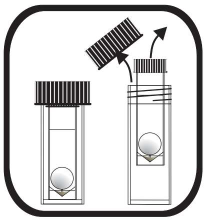


Made in Canada

SLYM-BART™
For water and wastewater

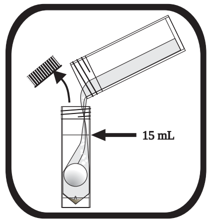
The SLYM-BARTs can be used as a P/A test capable of indicating to some extent the possible population size and the types of slime-forming organisms present in the water sample. Slime-forming bacteria are able to produce copious amounts of slime without necessarily having to use any iron. Iron bacteria also produce slime but usually it is thinner and involves the accumulation of various forms of iron.

Slime-forming bacteria generally produce the thickest slime formations under aerobic (oxidative) conditions, which develop around the floating ball. Growth may be recognized as a cloudy or gel-like growth, which can be localized or occur throughout the sample. These growths are usually white, grey, yellow, or beige in color and can darken over time.

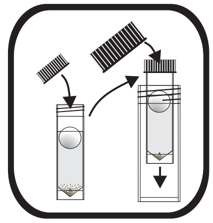


1. Remove the inner tube from the outer tube.

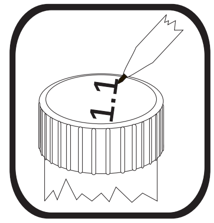
2. Using the outer tube from the BART, or a different sterile container, collect at least 20 mL of sample.
Note: *Do not touch or contaminate the inside of the tube or lid. Use aseptic technique.*



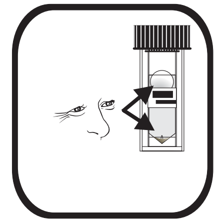
3. Fill the inner tube with sample until the level reaches the fill line.
Note: *After removing the cap from the inner tube, set it down directly on a* ***clean surface****. To avoid contamination, do not invert the cap.*



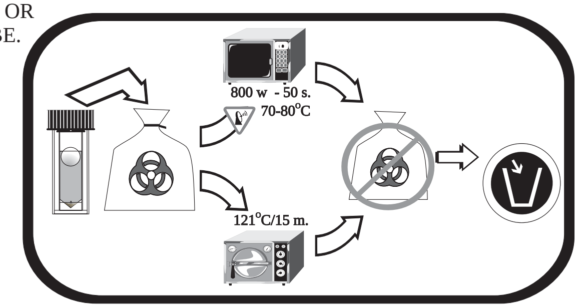
4. Tightly screw the cap back on the inner tube. Return the inner tube to the outer tube and screw the outer cap on tightly. Allow the medium to dissolve slowly, and the ball to rise at its own speed. DO NOT SHAKE OR SWIRL THE TUBE.



5. Label the outer tube with the date and sample origin.



6. Place the BART tube away from direct sunlight and allow to incubate at room temperature. Check the BART visually for reaction daily.



7. Safely dispose using a dedicated microwave oven or by autoclave.

Certificate of Analysis

This certificate confirms that the BART™ product listed by name, lot number, and batch number has been subjected to the full range of Quality Control procedures as outlined in "User Quality Control Manual in support of the BART Biodetection Technologies" published in 2004 by Droycon Bioconcepts Inc.

BART™ Type: SLYM-BART

Batch #:

Release date*:

Lot#:

Shipment date:

Expiry date:

* Approval for release includes the following criteria: 1. confirmation of sterility for the vials and caps, 2. approval of the medium pellet as being appropriately formed and acceptable, 3. is sterile, and 4. responds in a typical way to inoculation and incubation using selected defined microbial cultures. Details of these criteria are included in our Web Site.

This certificate confirms that the batch of the BART™ biodetectors listed have satisfactorily passed the QC screening procedures and were approved for release on the date given above

Certificate Number:

This certificate was issued by Droycon Bioconcepts Inc., 315 Dewdney Ave., Regina, SK., Canada, S4N 0E7 as an assurance that the product listed above has passed through the quality control procedures considered essential to the successful use of the testing device.

ISO 9001:2000
Registered

For more information, visit our web-site at:
http://www.DBI.ca

BART Test Kits Summary				
Test	**Cap Color**	**Length of Test (days)**	**Test Type**	**Reaction**
Nitrifying Bacteria	White	5	Presence	Pink shading of water
Denitrifying Bacteria	Gray	4	Presence	Foam around ball
Iron-Related Bacteria (IRB)	Red	8	Presence/Types	Various (see instruction sheet)
Sulphate-Related Bacteria (SRB)	Black	8	Presence/Types	Various (see instruction sheet)
Slime-Forming Bacteria (SLYM)	Green	8	Presence/Types	Various (see instruction sheet)

Monitoring Well	Sample Collection Date/Time	Testing Date/Time
MW-03B	6/19/10 @ 1120	6/26/10 @ 1425
MW-03D	6/19/10 @ 1320	6/26/10 @ 1425
MW-30A	6/16/10 @ 1345	6/26/10 @ 1425
MW-30C	6/16/10 @ 1103	6/26/10 @ 1425
MW-30D	6/16/10 @ 0930	6/26/10 @ 1425
MW-12D	6/19/10 @ 1511	6/26/10 @ 1425
MW-18C	6/15/10 @ 1844	6/26/10 @ 1425
MW-18D	6/15/10 @ 1424	6/26/10 @ 1425
MW-42D	6/18/10 @ 0925	6/26/10 @ 1425
MW-42E	Sample Unable to be Collected	
MW-45C	6/16/10 @ 1747	6/26/10 @ 1425
MW-45D	6/16/10 @ 1611	6/26/10 @ 1425
MW-46D1	6/17/10 @ 0955	6/26/10 @ 1425
MW-46D2	6/16/10 @ 1208	6/26/10 @ 1425

MW-03B **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam around ball, cloudy water
	4	Cloudy brown water, brown ring forming around ball
	5	Brown ring fully formed
	6	No new reactions
	7	No new reactions
	8	Brown ring forming on bottom of vial
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	Black particles on bottom of ball
	4	Dense black at bottom of vial
	5	Cloudy black water
	6	No new reactions
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Cloudy water
	5	Ring forming around ball
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-03D **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	Foam
	4	Foam
Nitrifying Bacteria (N)	5	None
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam
	4	Foam, Cloudy Brown water
	5	Brown ring forming around ball
	6	Brown ring
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	Black particles on bottom of ball
	4	Black ring on bottom of vial
	5	Black cloudy water
	6	No new reactions
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Cloudy water
	5	Ring around ball
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-12D **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	Foam
	4	Foam
Nitrifying Bacteria (N)	5	Present; ~1,000-10,000 cfu/mL
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam; Brown cloudy water
	4	Brown ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	None
	5	None
	6	None
	7	None
	8	None
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	None
	5	Ring around ball
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-18C **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	Cloudy water
	3	Brown cloudy water
	4	Brown ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	None
	5	Black particles on bottom of ball
	6	Dense black ring on bottom of vial
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	None
	5	Ring around ball
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-18D **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	None
	4	Black foam, Black mass on bottom
	5	Brown ring around ball
	6	Black water throughout vial
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	Black particles on ball
	3	No new reactions
	4	No new reactions
	5	No new reactions
	6	Dense black ring on bottom, Black ring around ball
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	Cloudy water
	3	No new reactions
	4	No new reactions
	5	Ring around ball
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-30A **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	Foam
	4	Foam
Nitrifying Bacteria (N)	5	Positive; ~1,000 cfu/mL
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam, Red around ball
	4	Cloudy brown water
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	Black particles on ball
	4	No new reactions
	5	Black ring on bottom of vial
	6	Dense Black ring on bottom of vial
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Ring around ball
	5	Cloudy water
	6	No new reactions
	7	No new reactions
	8	Mass starting to form on bottom of vial

MW-30C **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	None
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam, Cloudy brown forming
	4	Brown ring, Cloudy brown water
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	Black particles on ball
	5	Black ring on bottom of vial
	6	No new reactions
	7	Dense black ring on bottom; Black ring on ball
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-30D **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam, Brown cloudy water
	4	Black cloudy water, Brown ring around ball
	5	Black vial
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	Cloudy black water, Black ring at bottom of vial, Black particles on ball
	5	Dense black ring on bottom of vial
	6	No new reactions
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-42D **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam, Cloudy
	4	Brown ring around ball
	5	Cloudy brown water
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	None
	5	None
	6	None
	7	None
	8	None
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Cloudy, Ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-45C **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam
	4	Cloudy brown water, Brown ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	None
	5	None
	6	Black ring at bottom of vial
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Cloudy water, Ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions

MW-45D **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	Foam
	4	Foam
Nitrifying Bacteria (N)	5	Positive; ~1,000 cfu/mL
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam
	4	Black water, Brown ring around ball
	5	Black mass at bottom of vial
	6	No new reactions
	7	Black vial
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	Black particles on bottom of ball
	3	No new reactions
	4	No new reactions
	5	Ring forming around bottom of vial
	6	Black ring at bottom of vial
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	None
	3	None
	4	Ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	Mass forming at bottom of vial

MW-46D1 **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	None
	4	None
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	None
	4	Foam, Cloudy brown water, Brown ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	None
	4	None
	5	None
	6	None
	7	None
	8	None
Slime-Forming Bacteria (SLYM)	1	None
	2	Cloudy water
	3	No new reactions
	4	Ring around ball
	5	No new reactions
	6	Small mass at bottom of vial
	7	No new reactions
	8	No new reactions

MW-46D2 **Test Start Date : 6-23-2010**

BART Test Kit	Day	Reactions
De-Nitrifying Bacteria (DN)	1	None
	2	None
	3	Foam
	4	Foam
Nitrifying Bacteria (N)	5	Negative
Iron-Related Bacteria (IRB)	1	None
	2	None
	3	Foam, Cloudy water
	4	Brown ring
	5	Cloudy Brown water
	6	No new reactions
	7	No new reactions
	8	No new reactions
Sulphate-Reducing Bacteria (SRB)	1	None
	2	None
	3	Black particles on ball
	4	No new reactions
	5	No new reactions
	6	Black ring at bottom of vial
	7	No new reactions
	8	No new reactions
Slime-Forming Bacteria (SLYM)	1	None
	2	Cloudy Water
	3	No new reactions
	4	Ring around ball
	5	No new reactions
	6	No new reactions
	7	No new reactions
	8	Small mass on bottom of vial

Sample Name: MW-3B
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/19/2010 11:20 PM
Temperature: 22 C
Estimated Corrosion Risk: 5.6
Estimated Plugging Risk: 6.3
Estimated Health Risk: 2.4

Tester ID:
BART Type: IRB
Day 03: FO CL
Day 04: BC
Day 05: BR
Day 08: BG
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 03: BT
Population Estimate: 46.6 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 04: CL
Day 05: SR
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 04: FO
Population Estimate: 2.14 T cfu/ml
Aggressivity: Medium

Sample Name: MW-3D
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/19/2010 01:20 PM
Temperature: 22 C
Estimated Corrosion Risk: 5.6
Estimated Plugging Risk: 6.3
Estimated Health Risk: 2.1

Tester ID:
BART Type: IRB
Day 04: FO BC
Day 06: BR
Population Estimate: 8.82 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 03: BT
Population Estimate: 46.6 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 04: CL
Day 05: SR
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 03: FO
Population Estimate: 17.2 T cfu/ml
Aggressivity: Medium

Sample Name: MW-12D
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/19/2010 03:11 PM
Temperature: 22 C
Estimated Corrosion Risk: 2.4
Estimated Plugging Risk: 7.2
Estimated Health Risk: 2.4

Tester ID:
BART Type: IRB
Day 03: FO BC
Day 04: BR
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
[No Reactions Indicated]

Tester ID:
BART Type: SLYM
Day 05: SR
Population Estimate: 2.4 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 03: FO
Population Estimate: 17.2 T cfu/ml
Aggressivity: Medium

Sample Name: MW-18C
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/15/2010 06:44 PM
Temperature: 22 C
Estimated Corrosion Risk: 4.2
Estimated Plugging Risk: 7.2
Estimated Health Risk: 0.0

Tester ID:
BART Type: IRB
Day 02: CL
Day 03: BC
Day 04: BR
Population Estimate: 141 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 05: BT
Population Estimate: 910 cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 05: SR
Population Estimate: 2.4 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 04: FO
Population Estimate: 2.14 T cfu/ml
Aggressivity: Medium

Sample Name: MW-18D
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/15/2010 02:24 PM
Temperature: 22 C
Estimated Corrosion Risk: 6.3
Estimated Plugging Risk: 4.9
Estimated Health Risk: 4.5

Tester ID:
BART Type: IRB
Day 04: FO BG
Day 05: BR
Day 06: BL
Population Estimate: 8.82 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 02: BT
Population Estimate: 731 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 02: CL
Day 05: SR
Population Estimate: 632 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: DN
[No Reactions Indicated]

Sample Name: MW-30A
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/16/2010 01:45 PM
Temperature: 22 C
Estimated Corrosion Risk: 5.6
Estimated Plugging Risk: 6.3
Estimated Health Risk: 4.0

Tester ID:
BART Type: IRB
Day 03: FO RC
Day 04: BC
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 03: BT
Population Estimate: 46.6 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 04: SR
Day 05: CL
Day 08: DS
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 03: FO
Population Estimate: 17.2 T cfu/ml
Aggressivity: Medium

Sample Name: MW-30C
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/16/2010 11:03 AM
Temperature: 22 C
Estimated Corrosion Risk: 4.9
Estimated Plugging Risk: 7.2
Estimated Health Risk: 2.4

Tester ID:
BART Type: IRB
Day 03: FO BC
Day 04: BR
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 04: BT
Population Estimate: 5.21 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 04: SR
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
[No Reactions Indicated]

Sample Name: MW-30D
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/16/2010 09:30 AM
Temperature: 22 C
Estimated Corrosion Risk: 6.3
Estimated Plugging Risk: 7.2
Estimated Health Risk: 6.3

Tester ID:
BART Type: IRB
Day 03: FO BC
Day 04: BL BR
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 04: BB
Population Estimate: 5.21 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 04: SR
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 04: FO
Population Estimate: 2.14 T cfu/ml
Aggressivity: Medium

Sample Name: MW-42D
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/18/2010 09:25 AM
Temperature: 22 C
Estimated Corrosion Risk: 2.4
Estimated Plugging Risk: 5.4
Estimated Health Risk: 2.4

Tester ID:
BART Type: IRB
Day 03: FO CL
Day 04: BR
Day 05: BC
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
[No Reactions Indicated]

Tester ID:
BART Type: SLYM
Day 04: CL SR
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 04: FO
Population Estimate: 2.14 T cfu/ml
Aggressivity: Medium

Sample Name: MW-45C
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/16/2010 05:47 PM
Temperature: 22 C
Estimated Corrosion Risk: 4.5
Estimated Plugging Risk: 6.3
Estimated Health Risk: 2.4

Tester ID:
BART Type: IRB
Day 03: FO
Day 04: BC BR
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 06: BB
Population Estimate: 226 cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: SLYM
Day 04: CL SR
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 04: FO
Population Estimate: 2.14 T cfu/ml
Aggressivity: Medium

Sample Name: MW-45D
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/16/2010 04:11 PM
Temperature: 22 C
Estimated Corrosion Risk: 6.3
Estimated Plugging Risk: 4.2
Estimated Health Risk: 6.3

Tester ID:
BART Type: IRB
Day 03: FO
Day 04: BR BL
Day 05: BG
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 02: BT
Population Estimate: 731 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 04: SR
Day 08: DS
Population Estimate: 11.1 T cfu/ml
Aggressivity: Medium

Tester ID:
BART Type: DN
Day 03: FO
Population Estimate: 17.2 T cfu/ml
Aggressivity: Medium

Sample Name: MW-46D1
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/17/2010 09:55 AM
Temperature: 22 C
Estimated Corrosion Risk: 2.1
Estimated Plugging Risk: 4.2
Estimated Health Risk: 2.1

Tester ID:
BART Type: IRB
Day 04: FO CL
Day 05: BR
Population Estimate: 8.82 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
[No Reactions Indicated]

Tester ID:
BART Type: SLYM
Day 02: CL
Day 04: SR
Day 06: DS
Population Estimate: 632 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: DN
[No Reactions Indicated]

Sample Name: MW-46D2
Origin: Garvey Elevator Site
Notes: [None]
Testing Started: 6/23/2010 02:25 PM
Sample Taken: 6/16/2010 12:08 PM
Temperature: 22 C
Estimated Corrosion Risk: 5.6
Estimated Plugging Risk: 5.4
Estimated Health Risk: 2.4

Tester ID:
BART Type: IRB
Day 03: FO CL
Day 04: BR
Day 05: BC
Population Estimate: 35.3 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SRB
Day 03: BT
Population Estimate: 46.6 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: SLYM
Day 02: CL
Day 04: SR
Day 08: DS
Population Estimate: 632 T cfu/ml
Aggressivity: High

Tester ID:
BART Type: DN
Day 03: FO
Population Estimate: 17.2 T cfu/ml
Aggressivity: Medium

Appendix G
BART Kit Results - July 2010 Groundwater Sampling
Garvey Grain Elevator Site - Hastings, NE

Sample ID	Well ID	Sample Date	Sample Time	BART Kit	Reaction	Day of First Reaction	Bacteria Type	Aggressivity	Population Estimate (cfu/mL)	Estimated Corrosion Risk	Estimated Plugging Risk	Estimated Health Risk
4931-6	MW-03B	6/19/2010	1120	DN	Foam	4	Denitrifying	Medium	2.14 T	5.6	6.3	2.4
				N	Negative, no reactions observed							
				IRB	Foam, Cloudy water, Brown Cloudy water, Brown ring, Brown gel in bottom of vial	3	Anaerobic, Iron-related and Heterotrophic	High	35.3 T			
				SRB	Black particles on bottom of ball, Dense black ring on bottom of vial, Cloudy black water	3	Combination of aerobic and anaerobic SRB	High	46.6 T			
				SLYM	Cloudy water, Slime ring around ball	4	Slime-forming and Dense slime	Medium	11.1 T			
4931-8	MW-03D	6/19/2010	1320	DN	Foam	3	Denitrifying	Medium	17.2 T	5.6	6.3	2.1
				N	Negative, no reactions observed							
				IRB	Foam, Cloudy brown water, Brown ring	4	Anaerobic and Iron-related	High	8.82 T			
				SRB	Black particles on bottom of ball, Black ring on bottom of vial, Cloudy black water	3	Combination of aerobic and anaerobic SRB	High	46.6 T			
				SLYM	Cloudy water, Slime ring around ball	4	Slime-forming and Dense slime	Medium	11.1 T			
4932-18	MW-12D	6/19/2010	1511	DN	Foam	3	Denitrifying	Medium	17.2 T	2.4	7.2	2.4
				N	Positive		Nitrifying	NA	~1000-10000			
				IRB	Foam, Cloudy brown water, Brown ring	3	Anaerobic and Iron-related	High	35.3 T			
				SRB	Negative, no reactions observed							
				SLYM	Slime ring around ball	5	Dense slime	Medium	2.4 T			
4932-2	MW-18C	6/15/2010	1844	DN	Foam	4	Denitrifying	Medium	2.14 T	4.2	7.2	0.0
				N	Negative, no reactions observed							
				IRB	Cloudy water, Brown cloudy water, Brown ring	2	Iron-related and Heterotrophic	High	141 T			
				SRB	Black particles on bottom of ball, Dense black ring on bottom of vial	5	Combination of aerobic and anaerobic SRB	High	910			
				SLYM	Slime ring around ball	5	Dense slime	Medium	2.4 T			
4932-1	MW-18D	6/15/2010	1424	DN	Foam	4	Denitrifying	Medium	2.14 T	6.3	4.9	4.5
				N	Negative, no reactions observed							
				IRB	Foam, Black mass on bottom of vial, Brown ring around ball, Black water	4	Pseudomonads and Enterics, Anaerobic, Heterotrophic and Iron-related	High	8.82 T			
				SRB	Black particles on ball, Dense black ring on bottom of vial and around ball	2	Combination of aerobic and anaerobic SRB	High	731 T			
				SLYM	Cloudy water, Slime ring around ball	2	Slime-forming and Dense slime	High	632 T			

Appendix G
BART Kit Results - July 2010 Groundwater Sampling
Garvey Grain Elevator Site - Hastings, NE

Sample ID	Well ID	Sample Date	Sample Time	BART Kit	Reaction	Day of First Reaction	Bacteria Type	Aggressivity	Population Estimate (cfu/mL)	Estimated Corrosion Risk	Estimated Plugging Risk	Estimated Health Risk
4931-3	MW-30A	6/16/2010	1345	DN	Foam	3	Denitrifying	Medium	17.2 T	5.6	6.3	4.0
				N	Positive		Nitrifying	NA	~1000			
				IRB	Foam, Red Cloudy water, Brown cloudy water	3	Anaerobic, Enteric, Iron-related	High	35.3 T			
				SRB	Black particules on ball, Black ring on bottom of vial, Dense black ring on bottom of vial	3	Combination of aerobic and anaerobic SRB	High	46.6 T			
				SLYM	Slime ring, Cloudy water, Dense slime mass on bottom of vial	4	Slime-forming and Dense slime	Medium	11.1 T			
4931-2	MW-30C	6/16/2010	1103	DN	Negative, no reactions observed					4.9	7.2	2.4
				N	Negative, no reactions observed							
				IRB	Foam, Cloudy brown water, Brown ring	3	Anaerobic, Heterotrophic and Iron-related	High	35.3 T			
				SRB	Black particles on ball, Dense black ring on bottom of vial and around ball	4	Combination of aerobic and anaerobic SRB	High	5.21 T			
				SLYM	Slime ring around ball	4	Dense slime	Medium	11.1 T			
4931-1	MW-30D	6/16/2010	0930	DN	Foam	4	Denitrifying	Medium	2.14 T	6.3	7.2	6.3
				N	Negative, no reactions observed							
				IRB	Foam, Brown Cloudy water, Black solution, Brown ring around ball	3	Anaerobic, Iron-related, Pdeudomonads and Enterics	High	35.3 T			
				SRB	Cloudy black water, Black ring at bottom of vial, Black particles on bottom of ball	4	Combination of aerobic and anaerobic SRB	High	5.21 T			
				SLYM	Slime ring around ball	4	Dense slime	Medium	11.1 T			
4932-9	MW-42D	6/18/2010	0925	DN	Foam	4	Denitrifying	Medium	2.14 T	2.4	5.4	2.4
				N	Negative, no reactions observed							
				IRB	Foam, Cloudy water, Brown ring, Brown cloudy water	3	Anaerobic and Iron-related	High	35.3 T			
				SRB	Negative, no reactions observed							
				SLYM	Cloudy water, Slime ring around ball	4	Slime-forming and Dense slime	Medium	11.1 T			

Appendix G
BART Kit Results - July 2010 Groundwater Sampling
Garvey Grain Elevator Site - Hastings, NE

Sample ID	Well ID	Sample Date	Sample Time	BART Kit	Reaction	Day of First Reaction	Bacteria Type	Aggressivity	Population Estimate (cfu/mL)	Estimated Corrosion Risk	Estimated Plugging Risk	Estimated Health Risk
4932-5	MW-45C	6/16/2010	1747	DN	Foam	4	Denitrifying	Medium	2.14 T	4.5	6.3	2.4
				N	Negative, no reactions observed							
				IRB	Foam, Brown Cloudy water, Brown ring	3	Anaerobic and Iron-related	High	35.3 T			
				SRB	Black ring at bottom of vial	6	Dense anaerobic SRB consortium	Medium	226			
				SLYM	Cloudy water, Slime ring around ball	4	Slime-forming and Dense slime	Medium	11.1 T			
4932-3	MW-45D	6/16/2010	1611	DN	Foam	3	Denitrifying	Medium	17.2 T	6.3	4.2	6.3
				N	Positive		Nitrifying	NA	~1000			
				IRB	Foam, Brown Ring, Black solution, Brown Gel at bottom of vial	3	Anaerobic, Pseudomonads, Enterics, and Iron-related	High	35.3 T			
				SRB	Black particles on bottom of ball, Black ring on bottom of vial	2	Combination of aerobic and anaerobic SRB	High	731 T			
				SLYM	Slime ring, Dense slime mass on bottom of vial	4	Dense slime	Medium	11.1 T			
4932-6	MW-46D1	6/17/2010	0955	DN	Negative, no reactions observed					2.1	4.2	2.1
				N	Negative, no reactions observed							
				IRB	Foam, Cloudy water, Brown ring	4	Anaerobic, Heterotrophic and Iron-related	High	8.82 T			
				SRB	Negative, no reactions observed							
				SLYM	Cloudy water, Slime ring around ball, Dense slime mass in bottom of vial	2	Slime-forming and Dense slime	High	632 T			
4932-7	MW-46D2	6/16/2010	1208	DN	Foam	3	Denitrifying	Medium	17.2 T	5.6	5.4	2.4
				N	Negative, no reactions observed							
				IRB	Foam, Cloudy water, Brown ring, Brown cloudy water	3	Anaerobic, Iron-related and Heterotrophic	High	35.3 T			
				SRB	Black particles on ball, Black ring at bottom of vial	3	Combination of aerobic and anaerobic SRB	High	46.6 T			
				SLYM	Cloudy water, Slime ring around ball, Dense slime mass in bottom of vial	2	Slime-forming and Dense slime	High	632 T			

Notes:
Estimated risks based on a scale of 1-9, with higher values denoting larger risk.
Aggressivity based upon day that the first reaction occurs.
cfu/ml - colony-forming unit per milliliter
BART - Biological Activity Reaction Test
N - Nitrifying bacteria test, duration 5 days
DN - Denitrifying bacrteia test, duration 4 days
IRB - Iron Related Bacteria test, duration 8 days
SRB - Sulphate-reducing Bacteria test, duration 8 days
SLYM - Slime-forming Bacteria test, duration 8 days
NA - Not applicable

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Carus Remediation Technologies

Remediation Report

17 May 2010

Customer: HydroGeoLogic, Inc. Cc: K. Frasco
6340 Glenwood, Ste.200, Bld 7
OverlandPark, KS 66202

Attention: A. Rittgers

From: L. Mueller

TECH # 11232

Subject: RemOx® S ISCO Reagent Permanganate Natural Oxidant Demand

Summary

The overall average RemOx® S ISCO reagent permanganate natural oxidant demand (PNOD) for the four soil samples at 48 hours was determined to be 0.3 g/kg. The average demands ranged from 0.2 g/kg to 0.6 g/kg. These values are calculated on a weight as potassium permanganate ($KMnO_4$) per dry weight of soil.

Background

Four soil samples were received from HydroGeoLogic, Inc from the Garvey Elevator project located in Hastings, NE on May 6, 2010. The soil sample designations were MW-46D2:192-196', MW-41D2:154-158', MW-45D:156-160' and MW-12D:172-176'. The samples were analyzed for permanganate natural oxidant demand following ASTM D7262-07 Test Method A. The measurement of the permanganate natural oxidant demand is used to estimate the concentration of permanganate that will be consumed by the natural reducing agents during a given time period of 48 hours.

Experimental

The samples were analyzed for permanganate natural oxidant demand following ASTM D7262-07 Test Method A. A brief summary is as follows:

To determine the PNOD, the soil was baked at 105°C for 24 hours then allowed to cool to room temperature. The soil was then blended and passed through a U.S. 10 sieve (2 mm). For each sample, reactors were loaded with 50 grams of soil and 100 mL of 20.0 g/L $KMnO_4$ for an initial dose of 40.0 g/kg $KMnO_4$ on a dry soil weight basis at a 1:2 soil to aqueous reagent ratio. Each soil dose was performed in triplicate. The reaction vessels were inverted once to mix the reagents. Residual permanganate (MnO_4^-) was determined at 48 hours. The demands were calculated on a dry weight basis.

Results

The permanganate demand is the amount of permanganate consumed in a given amount of time. It should be noted that in a soil or groundwater sample, the oxidation of any compound by permanganate is dependent on the initial dose of permanganate and the reaction time available. As the permanganate dose is increased, the reaction rate and oxidant consumption may also increase. Some compounds that are not typically oxidized by permanganate under low doses can become reactive with permanganate at higher concentrations.

The 48-hour PNOD results can be seen in Table 1 (on a dry soil basis).

Table 1: 48-Hour PNOD *

Soil Sample Identification	Average and Standard Deviation (g/kg)	Replicate 1 (g/kg)	Replicate 2 (g/kg)	Replicate 3 (g/kg)
MW-46D2: 192-196'	0.6 ± 0.5	1.1	0.5	0.2
MW-41D2: 154-158'	0.2 ± 0.03	0.2	0.2	0.2
MW-45D: 156-160'	0.4 ± 0.0	0.4	0.4	0.4
MW-12D: 172-176'	0.2 ± 0.06	0.2	0.2	0.1
Overall Average	0.3			

*Demands were calculated on a weight $KMnO_4$/dry soil weight basis from an initial dose of 40.0 g/kg $KMnO_4$ initial dose at a 1:2 soil to aqueous solution ratio.

Conclusions

For this application the amount of permanganate needed will be dependent on the reaction time allowed. On average, the samples had a 48-hour permanganate natural oxidant demand value of 0.3 g/kg. Generally, remediation sites with a soil demand of less than 20.0 g/kg at 48 hours are favorable for *in situ* chemical oxidation with permanganate (see Table 2 for additional information). A pilot study or good characterization is generally recommended to confirm laboratory results and determine the parameters for a full-scale trial.

Table 2: Correlation of Permanganate Natural Oxidant Demand Results*

PNOD (g/kg)	**Rank**	Comment
<10	Low	ISCO with MnO_4^- is recommended. Soil contribution to MnO_4^- demand is low.
10-20	Moderate	ISCO with MnO_4^- is recommended. Soil contribution to MnO_4^- demand is moderate. Economics should be considered.
>20	High	ISCO with MnO_4^- is technically feasible. Other technologies may provide lower cost alternatives.

*Dry Weight Basis

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Carus Remediation Technologies
Remediation Report

1 June 2010

CARUS®

Customer:	HydroGeoLogic, Inc 6340 Glenwood, Ste 200, Bldg. 7 Overland Park, KS 66202	Cc: K. Frasco

Attention: A. Rittger

From: L. Mueller

TECH # 11238

Subject: RemOx® S ISCO Reagent Permanganate Natural Oxidant Demand

Summary
The overall average RemOx® S ISCO reagent permanganate natural oxidant demand (PNOD) for the two soil samples at 48 hours was determined to be 0.2 g/kg. These values are calculated on a weight as potassium permanganate ($KMnO_4$) per dry weight of soil.

Background
Two soil samples were received from HydroGeoLogic, Inc. from the Garvey Elevator project located in Hastings, Nebraska on May 20, 2010. The soil sample designations were MW-42E:147-151’ and MW-44E:187-191’. The samples were analyzed for permanganate natural oxidant demand following ASTM D7262-07 Test Method A. The measurement of the permanganate natural oxidant demand is used to estimate the concentration of permanganate that will be consumed by the natural reducing agents during a given time period of 48 hours.

Experimental
The samples were analyzed for permanganate natural oxidant demand following ASTM D7262-07 Test Method A. A brief summary is as follows:

To determine the PNOD, the soil was baked at 105°C for 24 hours then allowed to cool to room temperature. The soil was then blended and passed through a U.S. 10 sieve (2 mm). For each sample, reactors were loaded with 50 grams of soil and 100 mL of 20.0 g/L $KMnO_4$ for an initial dose of 40.0 g/kg $KMnO_4$ on a dry soil weight basis at a 1:2 soil to aqueous reagent ratio. Each soil dose was performed in triplicate. The reaction vessels were inverted once to mix the reagents. Residual permanganate (MnO_4^-) was determined at 48 hours. The demands were calculated on a dry weight basis.

Results
The permanganate demand is the amount of permanganate consumed in a given amount of time. It should be noted that in a soil or groundwater sample, the oxidation of any compound by permanganate is dependent on the initial dose of permanganate and the reaction time available. As the permanganate dose is increased, the reaction rate and oxidant consumption may also increase. Some compounds that are not typically oxidized by permanganate under low doses can become reactive with permanganate at higher concentrations.

The 48-hour PNOD results can be seen in Table 1 (on a dry soil basis).

Table 1: 48-Hour PNOD *

Soil Sample Identification	Average and Standard Deviation (g/kg)	Replicate 1 (g/kg)	Replicate 2 (g/kg)	Replicate 3 (g/kg)
MW-42E:147-151’	0.2 ± 0.1	0.2	0.3	0.2
MW-42E:187-191’	0.2 ± 0.1	0.2	0.1	0.2
Overall Average	0.2			

*Demands were calculated on a weight $KMnO_4$/dry soil weight basis from an initial dose of 40.0 g/kg $KMnO_4$ initial dose at a 1:2 soil to aqueous solution ratio.

Conclusions

For this application the amount of permanganate needed will be dependent on the reaction time allowed. On average, the soil samples had a low demand with a 48-hour permanganate demand value of 0.2 g/kg. Generally, remediation sites with a soil demand of less than 20.0 g/kg at 48 hours are favorable for *in situ* chemical oxidation with permanganate (see Table 2 for additional information). A pilot study or good characterization is generally recommended to confirm laboratory results and determine the parameters for a full-scale trial.

Table 2: Correlation of Permanganate Natural Oxidant Demand Results*

PNOD (g/kg)	**Rank**	Comment
<10	Low	ISCO with MnO_4^- is recommended. Soil contribution to MnO_4^- demand is low.
10-20	Moderate	ISCO with MnO_4^- is recommended. Soil contribution to MnO_4^- demand is moderate. Economics should be considered.
>20	High	ISCO with MnO_4^- is technically feasible. Other technologies may provide lower cost alternatives.

*Dry Weight Basis

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CHEM SOLUTIONS

December 23, 2009

Alan Rittgers
HydroGeologic, Inc.
6340 Glenwwod, Suite 200
Overland Park, KS 66202

RE: VIR005

Dear Alan:

Enclosed please find the analytical results for the Project #EP9033.01 Garvey Elevator on-site analysis of water samples. This report includes results for the samples collected on 12/17-12/21/09 and the associated quality control data.

The samples were analyzed for a site-specific list of volatile organic compounds by purge and trap gas chromatography/mass spectrometry as described in EPA Method 8260B. Tables 1-27 contain the water sample results. The quality control results are tabulated in Tables 28-37.

Thank you for the opportunity to work on this project.

Sincerely,

John Graves

John Graves
Laboratory Director

Phone: 303.771.5570 • Fax: 303.771.5574 • 9606 S. Spruce Mountain Rd. • Larkspur, CO 80118

12/17/2009

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TABLE 1

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB33:146-150	Date Sampled: 12/17/09
Client Project ID: Garvey Elevator	Date Received: 12/17/09
EPA Method 8260B	Date Analyzed: 12/17/09
EPA Split #4734-6	Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.1	100	86.5-111
Dichloroethane-D4	49.4	98.8	77.9-126
Toluene-D8	48.0	96.0	86.7-115
Bromofluorobenzene	47.0	94.0	83.7-114

ND= Not detected.

12/17/2009

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TABLE 2

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB33:140-144
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-8

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.7	101	86.5-111
Dichloroethane-D4	53.4	107	77.9-126
Toluene-D8	49.0	98.0	86.7-115
Bromofluorobenzene	48.3	96.6	83.7-114

ND= Not detected.

12/17/2009

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TABLE 3

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB33:134-138
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-9

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.7	99.4	86.5-111
Dichloroethane-D4	53.9	108	77.9-126
Toluene-D8	49.9	99.8	86.7-115
Bromofluorobenzene	48.2	96.4	83.7-114

ND= Not detected.

12/17/2009

CHEMSOLUTIONS

TABLE 4

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB33:128-132
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-10

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	51.7	103	86.5-111
Dichloroethane-D4	56.1	112	77.9-126
Toluene-D8	49.0	98.0	86.7-115
Bromofluorobenzene	50.6	101	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 5

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB38:138-142
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-11

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	3.4	2	ug/L
Carbon Tetrachloride	130	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	53.2	106	86.5-111
Dichloroethane-D4	52.3	105	77.9-126
Toluene-D8	49.6	99.2	86.7-115
Bromofluorobenzene	48.1	96.2	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 6

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB38:130-134
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-12

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	3.7	2	ug/L
Carbon Tetrachloride	100	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	5.0	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.7	99.4	86.5-111
Dichloroethane-D4	52.5	105	77.9-126
Toluene-D8	49.5	99.0	86.7-115
Bromofluorobenzene	46.8	93.6	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 7

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB38:124-128
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-13

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	3.1	2	ug/L
Carbon Tetrachloride	92	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	7.3	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	51.0	102	86.5-111
Dichloroethane-D4	52.0	104	77.9-126
Toluene-D8	49.3	98.6	86.7-115
Bromofluorobenzene	48.0	96.0	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 8

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB39:136-140
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-14

Date Sampled: 12/18/09
Date Received: 12/18/09
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.3	98.6	86.5-111
Dichloroethane-D4	48.5	97.0	77.9-126
Toluene-D8	49.8	99.6	86.7-115
Bromofluorobenzene	49.0	98.0	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 9

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB37:125-129
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-15

Date Sampled: 12/18/09
Date Received: 12/18/09
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	3.5	2	ug/L
Carbon Tetrachloride	12	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.0	96.0	86.5-111
Dichloroethane-D4	47.9	95.8	77.9-126
Toluene-D8	49.3	98.6	86.7-115
Bromofluorobenzene	46.6	93.2	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 10

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB37:120-124
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-16

Date Sampled: 12/18/09
Date Received: 12/18/09
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	1.9J	2	ug/L
Carbon Tetrachloride	29	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.6	97.2	86.5-111
Dichloroethane-D4	47.0	94.0	77.9-126
Toluene-D8	50.2	100	86.7-115
Bromofluorobenzene	47.1	94.2	83.7-114

J = The compound was detected at a concentration less than the practical quantitation limit.

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 11

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB40:125-129
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-17

Date Sampled: 12/18/09
Date Received: 12/18/09
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	4.3J	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.3	101	86.5-111
Dichloroethane-D4	48.6	97.2	77.9-126
Toluene-D8	48.7	97.4	86.7-115
Bromofluorobenzene	47.0	94.0	83.7-114

J = The compound was detected at a concentration less than the practical quantitation limit.

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 12

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB40:325-329
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: 12/18/09
Date Received: 12/18/09
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	4.4J	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.9	99.8	86.5-111
Dichloroethane-D4	53.6	107	77.9-126
Toluene-D8	49.4	98.8	86.7-115
Bromofluorobenzene	48.4	96.8	83.7-114

J = The compound was detected at a concentration less than the practical quantitation limit.

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 13

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: SB40:120-124
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4734-19

Date Sampled: 12/18/09
Date Received: 12/18/09
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	13	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.4	98.8	86.5-111
Dichloroethane-D4	52.0	104	77.9-126
Toluene-D8	49.6	99.2	86.7-115
Bromofluorobenzene	49.2	98.4	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 14

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:214-218
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-1

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	47.0	94.0	86.5-111
Dichloroethane-D4	48.5	97.0	77.9-126
Toluene-D8	48.6	97.2	86.7-115
Bromofluorobenzene	47.8	95.6	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 15

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:204-208	Date Sampled: 12/20/09
Client Project ID: Garvey Elevator	Date Received: 12/20/09
EPA Method 8260B	Date Analyzed: 12/20/09
EPA Split #4735-2	Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.0	96.0	86.5-111
Dichloroethane-D4	52.6	105	77.9-126
Toluene-D8	49.5	99.0	86.7-115
Bromofluorobenzene	49.1	98.2	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 16

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:194-198
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-3

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.9	102	86.5-111
Dichloroethane-D4	53.6	107	77.9-126
Toluene-D8	49.8	99.6	86.7-115
Bromofluorobenzene	49.6	99.2	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 17

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:184-188
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-4

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.9	97.8	86.5-111
Dichloroethane-D4	49.2	98.4	77.9-126
Toluene-D8	48.8	97.6	86.7-115
Bromofluorobenzene	46.9	93.8	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 18

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:384-388
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.4	98.8	86.5-111
Dichloroethane-D4	53.2	106	77.9-126
Toluene-D8	49.2	98.4	86.7-115
Bromofluorobenzene	50.0	100.0	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 19

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:174-178
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-6

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.8	97.6	86.5-111
Dichloroethane-D4	52.1	104	77.9-126
Toluene-D8	50.3	101	86.7-115
Bromofluorobenzene	49.1	98.2	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 20

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-01:164-168
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-7

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.9	97.8	86.5-111
Dichloroethane-D4	49.2	98	77.9-126
Toluene-D8	48.8	97.6	86.7-115
Bromofluorobenzene	46.9	93.8	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 21

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: HydroPunch Rinseate Blank
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-8

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	47.6	95.2	86.5-111
Dichloroethane-D4	48.9	97.8	77.9-126
Toluene-D8	48.5	97.0	86.7-115
Bromofluorobenzene	48.4	96.8	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 22

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-03:169-173
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-9

Date Sampled: 12/21/09
Date Received: 12/21/09
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	51.0	102	86.5-111
Dichloroethane-D4	54.5	109	77.9-126
Toluene-D8	48.3	96.6	86.7-115
Bromofluorobenzene	48.1	96.2	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 23

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-03:159-163
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-10

Date Sampled: 12/21/09
Date Received: 12/21/09
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.9	102	86.5-111
Dichloroethane-D4	51.3	103	77.9-126
Toluene-D8	49.1	98.2	86.7-115
Bromofluorobenzene	49.5	99.0	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 24

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-03:359-363
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: 12/21/09
Date Received: 12/21/09
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.9	97.8	86.5-111
Dichloroethane-D4	50.8	102	77.9-126
Toluene-D8	49.0	98.0	86.7-115
Bromofluorobenzene	48.9	97.8	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 25

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-03:149-153
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-12

Date Sampled: 12/21/09
Date Received: 12/21/09
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.8	97.6	86.5-111
Dichloroethane-D4	53.0	106	77.9-126
Toluene-D8	50.1	100	86.7-115
Bromofluorobenzene	48.1	96.2	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 26

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-03:138-142
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-13

Date Sampled: 12/21/09
Date Received: 12/21/09
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.6	99.2	86.5-111
Dichloroethane-D4	53.6	107	77.9-126
Toluene-D8	49.4	98.8	86.7-115
Bromofluorobenzene	48.1	96.2	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 27

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: TS4-03:124-128
Client Project ID: Garvey Elevator
EPA Method 8260B
EPA Split #4735-14

Date Sampled: 12/21/09
Date Received: 12/21/09
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.0	100	86.5-111
Dichloroethane-D4	52.8	106	77.9-126
Toluene-D8	50.4	101	86.7-115
Bromofluorobenzene	47.8	95.6	83.7-114

ND= Not detected.

12/17/2009

CHEMSOLUTIONS

TABLE 28

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Method Blank
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/16/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.3	101	86.5-111
Dichloroethane-D4	53.1	106	77.9-126
Toluene-D8	49.2	98.4	86.7-115
Bromofluorobenzene	48.8	97.6	83.7-114

ND= Not detected.

12/17/2009

CHEMSOLUTIONS

TABLE 29

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Method Blank
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.2	98.4	86.5-111
Dichloroethane-D4	51.6	103	77.9-126
Toluene-D8	49.4	98.8	86.7-115
Bromofluorobenzene	47.2	94.4	83.7-114

ND= Not detected.

12/18/2009

CHEMSOLUTIONS

TABLE 30

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Method Blank
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/18/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	52.0	104	86.5-111
Dichloroethane-D4	54.8	110	77.9-126
Toluene-D8	48.8	97.6	86.7-115
Bromofluorobenzene	49.2	98.4	83.7-114

ND= Not detected.

12/19/2009

CHEMSOLUTIONS

TABLE 31

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Method Blank
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/19/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.9	102	86.5-111
Dichloroethane-D4	55.3	111	77.9-126
Toluene-D8	49.2	98.4	86.7-115
Bromofluorobenzene	48.2	96.4	83.7-114

ND= Not detected.

12/20/2009

CHEMSOLUTIONS

TABLE 32

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Method Blank
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	47.8	95.6	86.5-111
Dichloroethane-D4	51.5	103	77.9-126
Toluene-D8	50.5	101	86.7-115
Bromofluorobenzene	47.0	94.0	83.7-114

ND= Not detected.

12/21/2009

CHEMSOLUTIONS

TABLE 33

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Method Blank
Client Project ID: Garvey Elevator
EPA Method 8260B

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/21/09
Sample Matrix: Water

Analyte	Concentration	Reporting Limit	Units
Carbon Disulfide	ND	2	ug/L
Chloroform	ND	2	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2 Dibromoethane	ND	2	ug/L
1,1,1 Trichloroethane	ND	2	ug/L
Trichloroethene	ND	2	ug/L
Tetrachloroethene	ND	2	ug/L

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	48.1	96.2	86.5-111
Dichloroethane-D4	51.7	103	77.9-126
Toluene-D8	48.9	97.8	86.7-115
Bromofluorobenzene	48.1	96.2	83.7-114

ND= Not detected.

CHEMSOLUTIONS

TABLE 34

MATRIX SPIKE RESULTS

Project ID: VIR005

Client Sample ID: SB33:140-144 MS & MSD
Client Project ID: Garvey Elvator
EPA Method 8260B
Spike Amount: 100 ppb

Date Sampled: 12/17/09
Date Received: 12/17/09
Date Analyzed: 12/17/09
Sample Matrix: Water

Analyte	MS Amount Recovered	% Recovery	MSD Amount Recovered	% Recovery	RPD
Carbon Disulfide	88.8	88.8	88.6	88.6	0.23
Chloroform	94.9	94.9	96.4	96.4	1.57
Carbon Tetrachloride	111	111	106	106	4.61
1,2 Dibromoethane	89.4	89.4	101	101	12.18
1,1,1 Trichloroethane	104	104	104	104	0.00
Trichloroethene	93.7	93.7	96.4	96.4	2.84
Tetrachloroethene	95.5	95.5	94.5	94.5	1.05

Surrogate	Amount Recovered	% Recovery	Amount Recovered	% Recovery
Dibromofluoromethane	52.3	105	53.9	108
Dichloroethane-D4	50.7	101	54.9	110
Toluene-D8	49.6	99.2	49.6	99.2
Bromofluorobenzene	48.0	96.0	48.0	96.0

12/21/2009

CHEMSOLUTIONS

TABLE 35

MATRIX SPIKE RESULTS

Project ID: VIR005

Client Sample ID: TS4-01;214-218 MS & MSD
Client Project ID: Garvey Elvator
EPA Method 8260B
Spike Amount: 100 ppb

Date Sampled: 12/20/09
Date Received: 12/20/09
Date Analyzed: 12/20/09
Sample Matrix: Water

Analyte	MS Amount Recovered	% Recovery	MSD Amount Recovered	% Recovery	RPD
Carbon Disulfide	89.5	89.5	82.3	82.3	8.38
Chloroform	95.1	95.1	103	103	7.98
Carbon Tetrachloride	99.8	99.8	90.0	90.0	10.33
1,2 Dibromoethane	103	103	103	103	0.00
1,1,1 Trichloroethane	101	101	103	103	1.96
Trichloroethene	95.6	95.6	101	101	5.49
Tetrachloroethene	101	101	102	102	0.99

Surrogate	Amount Recovered	% Recovery	Amount Recovered	% Recovery
Dibromofluoromethane	50.3	101	53.0	106
Dichloroethane-D4	52.4	105	59.0	118
Toluene-D8	49.3	98.6	49.1	98.2
Bromofluorobenzene	48.8	97.6	48.5	97.0

12/18/2009

CHEMSOLUTIONS

TABLE 36

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Laboratory Control Sample
Client Project ID: Garvey Elevator
EPA Method 8260B
100 ug/L Spike

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/16/09
Sample Matrix: Water

Analyte	Amount Recovered (ug/L)	% Recovery	QC Limits
Carbon Disulfide	90.5	90.5	70-130
Chloroform	91.6	91.6	70-130
Carbon Tetrachloride	103	103	70-130
1,2 Dibromoethane	95.8	95.8	70-130
1,1,1 Trichloroethane	99.7	99.7	80-122
Trichloroethene	96.1	96.1	78-115
Tetrachloroethene	95.4	95.4	69-125

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	49.0	98.0	86.5-111
Dichloroethane-D4	49.8	99.6	77.9-126
Toluene-D8	48.6	97.2	86.7-115
Bromofluorobenzene	48.2	96.4	83.7-114

12/19/2009

CHEMSOLUTIONS

TABLE 37

Project ID: VIR005

VOLATILE ORGANIC COMPOUND RESULTS

Client Sample ID: Laboratory Control Sample
Client Project ID: Garvey Elevator
EPA Method 8260B
100 ug/L Spike

Date Sampled: NA
Date Received: NA
Date Analyzed: 12/19/09
Sample Matrix: Water

Analyte	Amount Recovered (ug/L)	% Recovery	QC Limits
Carbon Disulfide	84.5	84.5	70-130
Chloroform	90.5	90.5	70-130
Carbon Tetrachloride	110	110	70-130
1,2 Dibromoethane	88.6	88.6	70-130
1,1,1 Trichloroethane	102	102	80-122
Trichloroethene	90.4	90.4	78-115
Tetrachloroethene	92.9	92.9	69-125

Surrogate	Amount Recovered (ug/L)	% Recovery	QC Limits
Dibromofluoromethane	50.6	101	86.5-111
Dichloroethane-D4	51.6	103	77.9-126
Toluene-D8	49.2	98.4	86.7-115
Bromofluorobenzene	45.8	91.6	83.7-114

--- End of Report ---

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 09/24/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4518

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101

Project ID: BZA72Z01

Project Desc: Garvey Elevator - RI/FS sampling

Location: Hastings State: Nebraska Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

GPRA PRC: 302DD2C

Purpose: Site Characterization

This ASR is for OU01 soil sampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FD = Field Duplicate

Units: Specific units in which results are reported.

ug/kg = Micrograms per Kilogram

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
R = The presence or absence of the analyte can not be determined from the data due to severe quality control problems. The data are rejected and considered unusable.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Solid	SB-04 (3-4' bgs)		08/04/2009	17:25			08/06/2009
2 -	__	Solid	SB-04 (10-11')		08/04/2009	17:50			08/06/2009
3 -	__	Solid	SB-04 (16-17' bgs)		08/04/2009	18:00			08/06/2009
4 -	__	Solid	SB-04 (18-20' bgs)		08/04/2009	18:05			08/06/2009
4 -	FD	Solid	SB-04 (18-20' bgs)/Field Duplicate of sample 4		08/04/2009	18:06			08/06/2009
7 -	__	Solid	SB-29 (15-16' bgs)		08/05/2009	15:30			08/07/2009
8 -	__	Solid	SB-29 (18-20' bgs)		08/05/2009	15:35			08/07/2009
8 -	FD	Solid	SB-29 (18-20' bgs)/Field Duplicate of sample 8		08/05/2009	15:36			08/07/2009
10 -	__	Solid	SB-31 (0-1' bgs)		08/05/2009	16:20			08/07/2009
11 -	__	Solid	SB-31 (5-6' bgs)		08/05/2009	16:25			08/07/2009
12 -	__	Solid	SB-31 (10-11' bgs)		08/05/2009	16:35			08/07/2009
13 -	__	Solid	SB-31 (18-20' bgs)		08/05/2009	16:45			08/07/2009
13 -	FD	Solid	SB-31 (18-20' bgs)/Field Duplicate of sample 13		08/05/2009	16:47			08/07/2009
15 -	__	Solid	SB-05 (1.3-2.3' bgs)		08/05/2009	17:20			08/07/2009
16 -	__	Solid	SB-05 (9-10' bgs)		08/05/2009	17:30			08/07/2009
17 -	__	Solid	SB-05 (13.5-14.5' bgs)		08/05/2009	17:45			08/07/2009
18 -	__	Solid	SB-24 (0-1' bgs)		08/06/2009	08:35			08/07/2009
19 -	__	Solid	SB-24 (5-7' bgs)		08/06/2009	08:45			08/07/2009
19 -	FD	Solid	SB-24 (5-7' bgs)/Field Duplicate of sample 19		08/06/2009	08:47			08/07/2009
21 -	__	Solid	SB-24 (10.5-12' bgs)		08/06/2009	09:00			08/07/2009
22 -	__	Solid	SB-24 (15-16' bgs)		08/06/2009	09:15			08/07/2009
23 -	__	Solid	SB-24 (19-20' bgs)		08/06/2009	09:20			08/07/2009
24 -	__	Solid	SB-23 (0.5-1.5' bgs)		08/06/2009	09:35			08/07/2009
25 -	__	Solid	SB-23 (9-10' bgs)		08/06/2009	09:50			08/07/2009
26 -	__	Solid	SB-23 (14-15' bgs)		08/06/2009	10:00			08/07/2009
27 -	__	Solid	SB-23 (19-20' bgs)		08/06/2009	10:10			08/07/2009
28 -	__	Solid	SB-20 (0-1.5)		08/06/2009	10:38			08/07/2009
29 -	__	Solid	SB-20 (6-6.5' bgs)		08/06/2009	10:44			08/07/2009
30 -	__	Solid	SB-20 (9.5-10' bgs)		08/06/2009	10:47			08/07/2009
31 -	__	Solid	SB-21 (0-0.5' bgs)		08/06/2009	10:55			08/07/2009
32 -	__	Solid	SB-21 (5.5-6' bgs)		08/06/2009	10:58			08/07/2009
33 -	__	Solid	SB-21 (9.5-10' bgs)		08/06/2009	11:00			08/07/2009
34 -	__	Solid	SB-32 (15-16' bgs)		08/07/2009	12:50			08/11/2009
35 -	__	Solid	SB-12 (0-1' bgs)		08/04/2009	11:10			08/06/2009
36 -	__	Solid	SB-12 (5-6' bgs)		08/04/2009	11:25			08/06/2009
37 -	__	Solid	SB-12 (10-12' bgs)		08/04/2009	11:45			08/06/2009
38 -	__	Solid	SB-12 (15-16' bgs)		08/04/2009	11:50			08/06/2009
39 -	__	Solid	SB-12 (19-20' bgs)		08/04/2009	11:55			08/06/2009
40 -	__	Solid	SB-11 (0-1' bgs)		08/04/2009	12:10			08/06/2009
41 -	__	Solid	SB-11 (5-6' bgs)		08/04/2009	12:20			08/06/2009
42 -	__	Solid	SB-11 (10-11' bgs)		08/04/2009	12:30			08/06/2009
43 -	__	Solid	SB-11 (16-17' bgs)		08/04/2009	12:40			08/06/2009

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
44 -	__	Solid	SB-11 (19-20' bgs)		08/04/2009	12:45			08/06/2009
44 -	FD	Solid	SB-11 (19-20' bgs)		08/04/2009	12:47			08/06/2009
46 -	__	Solid	SB-09 (0-1' bgs)		08/04/2009	13:00			08/06/2009
47 -	__	Solid	SB-09 (6-7' bgs)		08/04/2009	13:10			08/06/2009
48 -	__	Solid	SB-09 (15-16' bgs)		08/04/2009	13:25			08/06/2009
48 -	FD	Solid	SB-09 (15-16' bgs)		08/04/2009	13:27			08/06/2009
50 -	__	Solid	SB-09 (19-20' bgs)		08/04/2009	13:30			08/06/2009
51 -	__	Solid	SB-07 (1.5-2' bgs)		08/04/2009	14:00			08/06/2009
52 -	__	Solid	SB-07 (5-6' bgs)		08/04/2009	14:05			08/06/2009
53 -	__	Solid	SB-07 (15-16' bgs)		08/04/2009	14:15			08/06/2009
53 -	FD	Solid	SB-07 (15-16' bgs)		08/04/2009	14:16			08/06/2009
55 -	__	Solid	SB-07 (19-20' bgs)		08/04/2009	14:25			08/06/2009
56 -	__	Solid	SB-22 (2-2.5' bgs)		08/04/2009	15:05			08/06/2009
57 -	__	Solid	SB-22 (7-7.5' bgs)		08/04/2009	15:15			08/06/2009
58 -	__	Solid	SB-22 (10-11' bgs)		08/04/2009	15:25			08/06/2009
59 -	__	Solid	SB-22 (15-16' bgs)		08/04/2009	15:30			08/06/2009
60 -	__	Solid	SB-22 (19-20' bgs)		08/04/2009	15:35			08/06/2009
60 -	FD	Solid	SB-22 (19-20' bgs)/Field Duplicate of sample 60		08/04/2009	15:36			08/06/2009
62 -	__	Solid	SB-01 (0.5-1' bgs)		08/04/2009	16:00			08/06/2009
63 -	__	Solid	SB-01 (6-7' bgs)		08/04/2009	16:05			08/06/2009
64 -	__	Solid	SB-01 (10.5-11' bgs)		08/04/2009	16:15			08/06/2009
65 -	__	Solid	SB-01 (15-16' bgs)		08/04/2009	16:20			08/06/2009
66 -	__	Solid	SB-01 (19-20' bgs)		08/04/2009	16:25			08/06/2009
66 -	FD	Solid	SB-01 (19-20' bgs)/Field Duplicate of sample 66		08/04/2009	16:26			08/06/2009
68 -	__	Solid	SB-03 (4-5' bgs)		08/04/2009	16:35			08/06/2009
69 -	__	Solid	SB-03 (11.5-12' bgs)		08/04/2009	16:45			08/06/2009
70 -	__	Solid	SB-03 (16.5-17' bgs)		08/04/2009	17:00			08/06/2009
71 -	__	Solid	SB-03 (19-20' bgs)		08/04/2009	17:05			08/06/2009
71 -	FD	Solid	SB-03 (19-20' bgs)/Field Duplicate of sample 71		08/04/2009	17:06			08/06/2009
73 -	__	Solid	SB-14 (7-8' bgs)		08/05/2009	10:40			08/06/2009
74 -	__	Solid	SB-14 (10.5-11.5' bgs)		08/05/2009	10:50			08/06/2009
75 -	__	Solid	SB-14 (19-20' bgs)		08/05/2009	11:00			08/07/2009
75 -	FD	Solid	SB-14 (19-20' bgs)/Field Duplicate of sample 75		08/05/2009	11:01			08/07/2009
77 -	__	Solid	SB-15 (8.5-9' bgs)		08/05/2009	11:20			08/07/2009
78 -	__	Solid	SB-15 (12.5-13' bgs)		08/05/2009	11:30			08/07/2009
79 -	__	Solid	SB-15 (15-16' bgs)		08/05/2009	11:35			08/07/2009
80 -	__	Solid	SB-15 (19-20' bgs)		08/05/2009	11:40			08/07/2009
81 -	__	Solid	SB-26 (1-2' bgs)		08/05/2009	12:25			08/07/2009
82 -	__	Solid	SB-26 (7-8' bgs)		08/05/2009	12:30			08/07/2009
83 -	__	Solid	SB-26 (14-15' bgs)		08/05/2009	12:35			08/07/2009
84 -	__	Solid	SB-26 (19-20' bgs)		08/05/2009	12:40			08/07/2009
85 -	__	Solid	SB-25 (4-5' bgs)		08/05/2009	13:00			08/07/2009

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
86 -	__	Solid	SB-25 (8-9' bgs)		08/05/2009	13:05			08/07/2009
87 -	__	Solid	SB-25 (14-15' bgs)		08/05/2009	13:15			08/07/2009
88 -	__	Solid	SB-25 (19-20' bgs)		08/05/2009	13:20			08/07/2009
89 -	__	Solid	SB-27 (0-1' bgs)		08/05/2009	13:45			08/07/2009
90 -	__	Solid	SB-27 (6-7' bgs)		08/05/2009	13:50			08/07/2009
91 -	__	Solid	SB-27 (11-12' bgs)		08/05/2009	13:57			08/07/2009
92 -	__	Solid	SB-27 (19-20')		08/05/2009	14:00			08/07/2009
92 -	FD	Solid	SB-27 (19-20')/Field Duplicate of sample 92		08/05/2009	14:03			08/07/2009
94 -	__	Solid	SB-28 (2-3' bgs)		08/05/2009	14:30			08/07/2009
95 -	__	Solid	SB-28 (6-7' bgs)		08/05/2009	14:35			08/07/2009
96 -	__	Solid	SB-28 (12-13' bgs)		08/05/2009	14:40			08/07/2009
97 -	__	Solid	SB-28 (19-20' bgs)		08/05/2009	14:50			08/07/2009
98 -	__	Solid	SB-29 (0-1' bgs)		08/05/2009	15:00			08/07/2009
99 -	__	Solid	SB-29 (11-12' bgs)		08/05/2009	15:10			08/07/2009
100 -	__	Solid	SB-32 (0-1' bgs)		08/06/2009	11:30			08/07/2009
101 -	__	Solid	SB-32 (5.5-6.5' bgs)		08/06/2009	11:40			08/07/2009
102 -	__	Solid	SB-32 (10.5-11.5 bgs)		08/06/2009	11:45			08/07/2009
103 -	__	Solid	SB-32 (19-20' bgs)		08/06/2009	11:55			08/07/2009
104 -	__	Solid	SB-13 (0.5-1.5' bgs)		08/06/2009	13:05			08/07/2009
105 -	__	Solid	SB-13 (6-6.5' bgs)		08/06/2009	13:10			08/07/2009
106 -	__	Solid	SB-13 (11-11.5' bgs)		08/06/2009	13:20			08/07/2009
107 -	__	Solid	SB-13 (16.5-17' bgs)		08/06/2009	13:30			08/07/2009
108 -	__	Solid	SB-13 (19.5-20' bgs)		08/06/2009	13:35			08/07/2009
109 -	__	Solid	SB-17 (0-1' bgs)		08/06/2009	13:55			08/07/2009
109 -	FD	Solid	SB-17 (0-1' bgs)/Field Duplicate of sample 109		08/06/2009	13:56			08/07/2009
110 -	__	Solid	SB-17 (6-6.5' bgs)		08/06/2009	14:00			08/07/2009
111 -	__	Solid	SB-17 (9.5-10' bgs)		08/06/2009	14:05			08/07/2009
112 -	__	Solid	SB-30 (0-1' bgs)		08/06/2009	14:15			08/07/2009
113 -	__	Solid	SB-30 (5.5-6' bgs)		08/06/2009	14:20			08/07/2009
114 -	__	Solid	SB-30 (10.5-11' bgs)		08/06/2009	14:30			08/07/2009
115 -	__	Solid	SB-30 (15.5-16)		08/06/2009	14:40			08/07/2009
116 -	__	Solid	SB-30 (19.5-20)		08/06/2009	14:45			08/07/2009
117 -	__	Solid	SB-16 (0.5-1' bgs)		08/06/2009	15:05			08/07/2009
118 -	__	Solid	SB-16 (4.5-5' bgs)		08/06/2009	15:10			08/07/2009
119 -	__	Solid	SB-16 (11.5-12.5' bgs)		08/06/2009	15:20			08/07/2009
120 -	__	Solid	SB-16 (19.5-20' bgs)		08/06/2009	15:38			08/07/2009
121 -	__	Solid	SB-18 (0-0.5' bgs)		08/06/2009	15:50			08/07/2009
122 -	__	Solid	SB-18 (6.5-7.5' bgs)		08/06/2009	16:00			08/07/2009
123 -	__	Solid	SB-18 (12-13' bgs)		08/06/2009	16:10			08/07/2009
124 -	__	Solid	SB-18 (17.5-18.5' bgs)		08/06/2009	16:25			08/07/2009
125 -	__	Solid	SB-19 (0-0.5' bgs)		08/06/2009	16:37			08/07/2009
126 -	__	Solid	SB-19 (4-5' bgs)		08/06/2009	16:40			08/07/2009
126 -	FD	Solid	SB-19 (4-5' bgs)/Field Duplicate of sample 126		08/06/2009	16:41			08/07/2009

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
128 -	__	Solid	SB-19 (9.5-10' bgs)		08/06/2009	16:45			08/07/2009
129 -	__	Solid	SB-08 (7.5-8' bgs)		08/07/2009	10:00			08/11/2009
130 -	__	Solid	SB-08 (12-12.5)		08/07/2009	10:20			08/11/2009
131 -	__	Solid	SB-08 (14.5-15' bgs)		08/07/2009	10:35			08/11/2009
132 -	__	Solid	SB-08 (19.5-20' bgs)		08/07/2009	10:40			08/11/2009
133 -	__	Solid	SB-10 (1.5-2' bgs)		08/07/2009	10:55			08/11/2009
134 -	__	Solid	SB-10 (7-7.5' bgs)		08/07/2009	11:10			08/11/2009
135 -	__	Solid	SB-10 (12-12.5' bgs)		08/07/2009	11:25			08/11/2009
136 -	__	Solid	SB-10 (16-16.5' bgs)		08/07/2009	11:40			08/11/2009
137 -	__	Solid	SB-10 (19.5-20' bgs)		08/07/2009	11:45			08/11/2009
138 -	__	Solid	SB-02 (0.5-1' bgs)		08/08/2009	09:00			08/11/2009
139 -	__	Solid	SB-02 (7-7.5' bgs)		08/08/2009	09:10			08/11/2009
140 -	__	Solid	SB-02 (11-11.5' bgs)		08/08/2009	09:13			08/11/2009
141 -	__	Solid	SB-02 (15-16' bgs)		08/08/2009	09:17			08/11/2009
142 -	__	Solid	SB-02 (21-22' bgs)		08/08/2009	09:25			08/11/2009
143 -	__	Solid	SB-02 (27-28' bgs)		08/08/2009	09:35			08/11/2009
144 -	__	Solid	SB-02 (34-35' bgs)		08/08/2009	09:43			08/11/2009
145 -	__	Solid	SB-02 (44-45' bgs)		08/08/2009	10:05			08/11/2009
146 -	__	Solid	SB-02 (54-55)		08/08/2009	10:40			08/11/2009
147 -	__	Solid	SB-02 (64-65' bgs)		08/08/2009	12:25			08/11/2009
148 -	__	Solid	SB-02 (70.5-71)		08/08/2009	15:50			08/11/2009
149 -	__	Solid	SB-02 (81-81.5)		08/09/2009	09:40			08/11/2009
150 -	__	Solid	SB-06 (4-5' bgs)		08/09/2009	11:30			08/12/2009
151 -	__	Solid	SB-06 (9-10' bgs)		08/09/2009	11:35			08/11/2009
152 -	__	Solid	SB-06 (14-15' bgs)		08/09/2009	11:45			08/11/2009
153 -	__	Solid	SB-06 (19-20' bgs)		08/09/2009	11:50			08/11/2009

Analysis	Comments About Results For This Analysis

1 Herbicides in Soil by GC/EC

Lab: REAP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3240.6C (see comments)

Basis: Dry

Samples:						
1-__	2-__	3-__	4-__	4-FD	7-__	8-__
8-FD	10-__	11-__	12-__	13-__	13-FD	15-__
16-__	17-__	18-__	19-__	19-FD	21-__	22-__
23-__	24-__	25-__	26-__	27-__	34-__	99-__
100-__	101-__	102-__	103-__			

Comments:
2,4-D; 2,4,5-T; & 2,4,5-TP were UJ-coded in samples 4518-4, 4513-13, & 4518-15. These compounds were not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of the surrogate compound. The actual reporting limit for this compound may be higher than the reported value.

1 Pesticides in Soil by GC/EC

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Basis: Dry

Samples:						
1-__	2-__	3-__	4-__	4-FD	7-__	8-__
8-FD	10-__	11-__	12-__	13-__	13-FD	15-__
16-__	17-__	18-__	19-__	19-FD	21-__	22-__
23-__	24-__	25-__	26-__	27-__	28-__	29-__
30-__	31-__	32-__	33-__	34-__	99-__	100-__
101-__	102-__	103-__	109-__	109-FD	110-__	111-__
121-__	122-__	123-__	124-__	125-__	126-__	126-FD
128-__						

Comments:
Column comparison % differences were exceeded (>25% D) for heptachlor epoxide (30.9%) in sample -31. Although the analyte in question has been positively identified in the sample; the quantitation is an estimate (J-coded) due to poor precision obtained for this analyte in the column comparison results.

1 Semi-Volatile Organic Compounds in Soil

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Basis: Dry

Samples:						
1-__	2-__	3-__	4-__	4-FD	7-__	8-__
8-FD	10-__	11-__	12-__	13-__	13-FD	15-__
16-__	17-__	18-__	19-__	19-FD	21-__	22-__

Analysis	Comments About Results For This Analysis

Samples: 23-__ 24-__ 25-__ 26-__ 27-__ 34-__ 99-__

Comments:

The RPD for pentachlorophenol (26.1%) was above the control limits (20%) on the IC of 8/10/09. Pentachlorophenol was UJ-coded in samples -1, -2, -3, -4, -4FD, -7, -8, -8FD, -10, -11, -12, -13, -13FD, -15, -16, -17, -18, -19, -19FD, -21, -22, -23, -24, -25 -26, -27, -34 and -99. This analyte was not found in the samples at or above the reporting limit; however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration curve not meeting linearity specifications. The actual reporting limit may be higher than the reported value.

The %D for pentachlorophenol was below control limits (%D = -26.0% vs. ± 25%) on the opening CC of 8/13/09; and the %Ds for pentachlorophenol (%D = -36.3% vs. ± 25%) and dibenzo(a,h)anthracene (%D = -34.5% vs. ± 25%) were below control limits on the opening CC of 8/19/09. Pentachlorophenol was UJ-coded in samples -17, -18, -19, -19FD, -21, -22, -23, -24, -25, -26, -34 and -99; and dibenzo(a,h)anthracene was UJ-coded in sample -34. These analytes were not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to the continuing calibration checks not meeting accuracy specifications. The actual reporting limits for these analytes may be higher than the reported values.

Naphthalene (control limits = 570 µg/kg - 3000 µg/kg vs. 490 µg/kg reported) was UJ-coded in samples -1, -2, -3, -4 and -4FD. This analyte was not found in the sample at or above the reporting limit; however, the reporting limit is an estimate (UJ-coded) due to low recovery of the PE sample for this analyte. The actual reporting limit for this analyte may be higher than the reported value.

1 UAA Pesticides in Soil by GC/EC

Lab: REAP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3240.2G (see comments)

Basis: Dry

Samples:							
	1-__	2-__	3-__	4-__	4-FD	7-__	8-__
	8-FD	10-__	11-__	12-__	13-__	13-FD	15-__
	16-__	17-__	18-__	19-__	19-FD	21-__	22-__
	23-__	24-__	25-__	26-__	27-__	34-__	99-__
	100-__	101-__	102-__	103-__			

Comments:

(N/A)

1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Basis: Dry

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 7-__ 8-__

Analysis	Comments About Results For This Analysis

Samples:

8-FD	10-__	11-__	12-__	13-__	13-FD	15-__
16-__	17-__	18-__	19-__	19-FD	21-__	22-__
23-__	24-__	25-__	26-__	27-__	35-__	36-__
37-__	38-__	39-__	40-__	41-__	42-__	43-__
44-__	44-FD	46-__	47-__	48-__	48-FD	50-__
51-__	52-__	53-__	53-FD	55-__	56-__	57-__
58-__	59-__	60-__	60-FD	62-__	63-__	64-__
65-__	66-__	66-FD	68-__	69-__	70-__	71-__
71-FD	73-__	74-__	75-__	75-FD	77-__	78-__
79-__	80-__	81-__	82-__	83-__	84-__	85-__
86-__	87-__	88-__	89-__	90-__	91-__	92-__
92-FD	94-__	95-__	96-__	97-__	98-__	99-__
104-__	105-__	106-__	107-__	108-__	112-__	113-__
114-__	115-__	116-__	117-__	118-__	119-__	120-__
122-__	123-__	124-__	129-__	130-__	131-__	132-__
133-__	134-__	135-__	136-__	137-__	138-__	139-__
140-__	141-__	142-__	143-__	144-__	145-__	146-__
147-__	148-__	149-__	150-__	151-__	152-__	153-__

Comments:

Low recovery was reported for vinyl chloride-d3 (control limits = 68% - 122%) in samples -58 (67%), -60FD (67%) and -63 (67%).
Vinyl chloride was UJ-coded in samples -58, -60FD and -63. This analyte was not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to low recovery of the surrogate analyte. The actual reporting limits for this analyte may be higher than the reported values.

Low recoveries were reported for 1,4-dichlorobenzene-d4 (control limits = 50% - 200%) in sample -94 (43%).
An internal standard in sample -94 had unacceptable responses indicating that is was not possible to obtain valid results for bromoform, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dibromo-3-chloropropane, 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene in this sample. Results of 'N/A' were reported with R-codes for these analytes.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	11.9 U	11.9 U	11.9 U	11.9 UJ
2,4,5-TP	ug/kg	9.7 U	9.7 U	9.7 U	9.7 UJ
2,4-D	ug/kg	19.9 U	20 U	20 U	20 UJ
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
Aroclor 1016	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1221	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1232	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1242	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1248	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1254	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1260	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1262	ug/kg	41 U	40 U	42 U	40 U
Aroclor 1268	ug/kg	41 U	40 U	42 U	40 U
A-BHC	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
B-BHC	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
D-BHC	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
G-BHC	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
cis-Chlordane	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
trans-Chlordane	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
p,p'-DDD	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
p,p'-DDE	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
p,p'-DDT	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Dieldrin	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Endosulfan I	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
Endosulfan II	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Endosulfan Sulfate	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Endrin	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Endrin Aldehyde	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Endrin Ketone	ug/kg	4.1 U	4.0 U	4.2 U	4.0 U
Heptachlor	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
Heptachlor Epoxide	ug/kg	2.1 U	2.0 U	2.2 U	2.0 U
p,p'-Methoxychlor	ug/kg	21 U	20 U	22 U	20 U
Toxaphene	ug/kg	210 U	200 U	220 U	200 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	210 U	200 U	220 U	200 U
Acenaphthylene	ug/kg	210 U	200 U	220 U	200 U
Acetophenone	ug/kg	210 U	200 U	220 U	200 U
Anthracene	ug/kg	210 U	200 U	220 U	200 U
Atrazine	ug/kg	210 U	200 U	220 U	200 U
Benzaldehyde	ug/kg	210 U	200 U	220 U	200 U
Benzo(a)anthracene	ug/kg	210 U	200 U	220 U	200 U
Benzo(a)pyrene	ug/kg	210 U	200 U	220 U	200 U
Benzo(b)fluoranthene	ug/kg	210 U	200 U	220 U	200 U
Benzo(g,h,i)perylene	ug/kg	210 U	200 U	220 U	200 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Benzo(k)fluoranthene	ug/kg	210 U	200 U	220 U	200 U
Biphenyl	ug/kg	210 U	200 U	220 U	200 U
bis(2-Chloroethoxy)methane	ug/kg	210 U	200 U	220 U	200 U
bis(2-Chloroethyl)ether	ug/kg	210 U	200 U	220 U	200 U
bis(2-Chloroisopropyl)ether	ug/kg	210 U	200 U	220 U	200 U
bis(2-Ethylhexyl)phthalate	ug/kg	210 U	200 U	220 U	200 U
4-Bromophenyl-phenylether	ug/kg	210 U	200 U	220 U	200 U
Butylbenzylphthalate	ug/kg	210 U	200 U	220 U	200 U
Caprolactam	ug/kg	210 U	200 U	220 U	200 U
Carbazole	ug/kg	210 U	200 U	220 U	200 U
4-Chloro-3-methylphenol	ug/kg	210 U	200 U	220 U	200 U
4-Chloroaniline	ug/kg	210 U	200 U	220 U	200 U
2-Chloronaphthalene	ug/kg	210 U	200 U	220 U	200 U
2-Chlorophenol	ug/kg	210 U	200 U	220 U	200 U
4-Chlorophenyl-phenylether	ug/kg	210 U	200 U	220 U	200 U
Chrysene	ug/kg	210 U	200 U	220 U	200 U
Di-n-butylphthalate	ug/kg	210 U	200 U	220 U	200 U
Di-n-octylphthalate	ug/kg	210 U	200 U	220 U	200 U
Dibenz(a,h)anthracene	ug/kg	210 U	200 U	220 U	200 U
Dibenzofuran	ug/kg	210 U	200 U	220 U	200 U
3,3'-Dichlorobenzidine	ug/kg	210 U	200 U	220 U	200 U
2,4-Dichlorophenol	ug/kg	210 U	200 U	220 U	200 U
Diethylphthalate	ug/kg	210 U	200 U	220 U	200 U
2,4-Dimethylphenol	ug/kg	210 U	200 U	220 U	200 U
Dimethylphthalate	ug/kg	210 U	200 U	220 U	200 U
4,6-Dinitro-2-methylphenol	ug/kg	410 U	400 U	420 U	400 U
2,4-Dinitrophenol	ug/kg	410 U	400 U	420 U	400 U
2,4-Dinitrotoluene	ug/kg	210 U	200 U	220 U	200 U
2,6-Dinitrotoluene	ug/kg	210 U	200 U	220 U	200 U
Fluoranthene	ug/kg	210 U	200 U	220 U	200 U
Fluorene	ug/kg	210 U	200 U	220 U	200 U
Hexachlorobenzene	ug/kg	210 U	200 U	220 U	200 U
Hexachlorobutadiene	ug/kg	210 U	200 U	220 U	200 U
Hexachlorocyclopentadiene	ug/kg	210 U	200 U	220 U	200 U
Hexachloroethane	ug/kg	210 U	200 U	220 U	200 U
Indeno(1,2,3-cd)pyrene	ug/kg	210 U	200 U	220 U	200 U
Isophorone	ug/kg	210 U	200 U	220 U	200 U
2-Methylnaphthalene	ug/kg	210 U	200 U	220 U	200 U
2-Methylphenol	ug/kg	210 U	200 U	220 U	200 U
4-Methylphenol	ug/kg	210 U	200 U	220 U	200 U
Naphthalene	ug/kg	210 UJ	200 UJ	220 UJ	200 UJ
2-Nitroaniline	ug/kg	410 U	400 U	420 U	400 U
3-Nitroaniline	ug/kg	410 U	400 U	420 U	400 U
4-Nitroaniline	ug/kg	410 U	400 U	420 U	400 U
Nitrobenzene	ug/kg	210 U	200 U	220 U	200 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
2-Nitrophenol	ug/kg	210 U	200 U	220 U	200 U
4-Nitrophenol	ug/kg	410 U	400 U	420 U	400 U
N-nitroso-di-n-propylamine	ug/kg	210 U	200 U	220 U	200 U
N-nitrosodiphenylamine	ug/kg	210 U	200 U	220 U	200 U
Pentachlorophenol	ug/kg	410 UJ	400 UJ	420 UJ	400 UJ
Phenanthrene	ug/kg	210 U	200 U	220 U	200 U
Phenol	ug/kg	210 U	200 U	220 U	200 U
Pyrene	ug/kg	210 U	200 U	220 U	200 U
1,2,4,5-Tetrachlorobenzene	ug/kg	210 U	200 U	220 U	200 U
2,4,5-Trichlorophenol	ug/kg	210 U	200 U	220 U	200 U
2,4,6-Trichlorophenol	ug/kg	210 U	200 U	220 U	200 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	81.9 U	82.1 U	82.2 U	82.2 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	15 U	21	19	23
Benzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Bromochloromethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Bromodichloromethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Bromoform	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Bromomethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
2-Butanone	ug/kg	15 U	13 U	13 U	13 U
Carbon Disulfide	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Carbon Tetrachloride	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Chlorobenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Chloroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Chloroform	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Chloromethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Cyclohexane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2-Dibromo-3-Chloropropane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Dibromochloromethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2-Dibromoethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2-Dichlorobenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,3-Dichlorobenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,4-Dichlorobenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Dichlorodifluoromethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,1-Dichloroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2-Dichloroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,1-Dichloroethene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
cis-1,2-Dichloroethene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
trans-1,2-Dichloroethene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2-Dichloropropane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
cis-1,3-Dichloropropene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
trans-1,3-Dichloropropene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Ethyl Benzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
2-Hexanone	ug/kg	15 U	13 U	13 U	13 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Isopropylbenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Methyl Acetate	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Methyl tert-butyl ether	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Methylcyclohexane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Methylene Chloride	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
4-Methyl-2-Pentanone	ug/kg	15 U	13 U	13 U	13 U
Styrene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,1,2,2-Tetrachloroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Tetrachloroethene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Toluene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2,3-Trichlorobenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,2,4-Trichlorobenzene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,1,1-Trichloroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,1,2-Trichloroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Trichloroethene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Trichlorofluoromethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
1,1,2-Trichlorotrifluoroethane	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
Vinyl Chloride	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
m and/or p-Xylene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U
o-Xylene	ug/kg	7.5 U	6.4 U	6.7 U	6.5 U

Analysis/ Analyte	Units	4-FD	7-__	8-__	8-FD
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	11.9 U	11.1 U	11.6 U	11.6 U
2,4,5-TP	ug/kg	9.7 U	9 U	9.4 U	9.4 U
2,4-D	ug/kg	20 U	18.5 U	19.4 U	19.4 U
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
Aroclor 1016	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1221	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1232	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1242	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1248	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1254	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1260	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1262	ug/kg	40 U	39 U	39 U	38 U
Aroclor 1268	ug/kg	40 U	39 U	39 U	38 U
A-BHC	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
B-BHC	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
D-BHC	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
G-BHC	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
cis-Chlordane	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
trans-Chlordane	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
p,p'-DDD	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
p,p'-DDE	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
p,p'-DDT	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Dieldrin	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Endosulfan I	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
Endosulfan II	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Endosulfan Sulfate	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Endrin	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Endrin Aldehyde	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Endrin Ketone	ug/kg	4.0 U	3.9 U	3.9 U	3.8 U
Heptachlor	ug/kg	2.1 U	2.0 U	2.0 U	2.0 U
Heptachlor Epoxide	ug/kg	2.1	2.0 U	2.0 U	2.0 U
p,p'-Methoxychlor	ug/kg	21 U	20 U	20 U	20 U
Toxaphene	ug/kg	210 U	200 U	200 U	200 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	210 U	200 U	200 U	200 U
Acenaphthylene	ug/kg	210 U	200 U	200 U	200 U
Acetophenone	ug/kg	210 U	200 U	200 U	200 U
Anthracene	ug/kg	210 U	200 U	200 U	200 U
Atrazine	ug/kg	210 U	200 U	200 U	200 U
Benzaldehyde	ug/kg	210 U	200 U	200 U	200 U
Benzo(a)anthracene	ug/kg	210 U	200 U	200 U	200 U
Benzo(a)pyrene	ug/kg	210 U	200 U	200 U	200 U
Benzo(b)fluoranthene	ug/kg	210 U	200 U	200 U	200 U
Benzo(g,h,i)perylene	ug/kg	210 U	200 U	200 U	200 U

Analysis/ Analyte	Units	4-FD	7-__	8-__	8-FD
Benzo(k)fluoranthene	ug/kg	210 U	200 U	200 U	200 U
Biphenyl	ug/kg	210 U	200 U	200 U	200 U
bis(2-Chloroethoxy)methane	ug/kg	210 U	200 U	200 U	200 U
bis(2-Chloroethyl)ether	ug/kg	210 U	200 U	200 U	200 U
bis(2-Chloroisopropyl)ether	ug/kg	210 U	200 U	200 U	200 U
bis(2-Ethylhexyl)phthalate	ug/kg	210 U	200 U	200 U	200 U
4-Bromophenyl-phenylether	ug/kg	210 U	200 U	200 U	200 U
Butylbenzylphthalate	ug/kg	210 U	200 U	200 U	200 U
Caprolactam	ug/kg	210 U	200 U	200 U	200 U
Carbazole	ug/kg	210 U	200 U	200 U	200 U
4-Chloro-3-methylphenol	ug/kg	210 U	200 U	200 U	200 U
4-Chloroaniline	ug/kg	210 U	200 U	200 U	200 U
2-Chloronaphthalene	ug/kg	210 U	200 U	200 U	200 U
2-Chlorophenol	ug/kg	210 U	200 U	200 U	200 U
4-Chlorophenyl-phenylether	ug/kg	210 U	200 U	200 U	200 U
Chrysene	ug/kg	210 U	200 U	200 U	200 U
Di-n-butylphthalate	ug/kg	210 U	200 U	200 U	200 U
Di-n-octylphthalate	ug/kg	210 U	200 U	200 U	200 U
Dibenz(a,h)anthracene	ug/kg	210 U	200 U	200 U	200 U
Dibenzofuran	ug/kg	210 U	200 U	200 U	200 U
3,3'-Dichlorobenzidine	ug/kg	210 U	200 U	200 U	200 U
2,4-Dichlorophenol	ug/kg	210 U	200 U	200 U	200 U
Diethylphthalate	ug/kg	210 U	200 U	200 U	200 U
2,4-Dimethylphenol	ug/kg	210 U	200 U	200 U	200 U
Dimethylphthalate	ug/kg	210 U	200 U	200 U	200 U
4,6-Dinitro-2-methylphenol	ug/kg	400 U	390 U	390 U	380 U
2,4-Dinitrophenol	ug/kg	400 U	390 U	390 U	380 U
2,4-Dinitrotoluene	ug/kg	210 U	200 U	200 U	200 U
2,6-Dinitrotoluene	ug/kg	210 U	200 U	200 U	200 U
Fluoranthene	ug/kg	210 U	200 U	200 U	200 U
Fluorene	ug/kg	210 U	200 U	200 U	200 U
Hexachlorobenzene	ug/kg	210 U	200 U	200 U	200 U
Hexachlorobutadiene	ug/kg	210 U	200 U	200 U	200 U
Hexachlorocyclopentadiene	ug/kg	210 U	200 U	200 U	200 U
Hexachloroethane	ug/kg	210 U	200 U	200 U	200 U
Indeno(1,2,3-cd)pyrene	ug/kg	210 U	200 U	200 U	200 U
Isophorone	ug/kg	210 U	200 U	200 U	200 U
2-Methylnaphthalene	ug/kg	210 U	200 U	200 U	200 U
2-Methylphenol	ug/kg	210 U	200 U	200 U	200 U
4-Methylphenol	ug/kg	210 U	200 U	200 U	200 U
Naphthalene	ug/kg	210 UJ	230	200 U	200 U
2-Nitroaniline	ug/kg	400 U	390 U	390 U	380 U
3-Nitroaniline	ug/kg	400 U	390 U	390 U	380 U
4-Nitroaniline	ug/kg	400 U	390 U	390 U	380 U
Nitrobenzene	ug/kg	210 U	200 U	200 U	200 U

Analysis/ Analyte	Units	4-FD	7-__	8-__	8-FD
2-Nitrophenol	ug/kg	210 U	200 U	200 U	200 U
4-Nitrophenol	ug/kg	400 U	390 U	390 U	380 U
N-nitroso-di-n-propylamine	ug/kg	210 U	200 U	200 U	200 U
N-nitrosodiphenylamine	ug/kg	210 U	200 U	200 U	200 U
Pentachlorophenol	ug/kg	400 UJ	390 UJ	390 UJ	380 UJ
Phenanthrene	ug/kg	210 U	200 U	200 U	200 U
Phenol	ug/kg	210 U	200 U	200 U	200 U
Pyrene	ug/kg	210 U	200 U	200 U	200 U
1,2,4,5-Tetrachlorobenzene	ug/kg	210 U	200 U	200 U	200 U
2,4,5-Trichlorophenol	ug/kg	210 U	200 U	200 U	200 U
2,4,6-Trichlorophenol	ug/kg	210 U	200 U	200 U	200 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	82.2 U	76.1 U	79.8 U	79.8 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	22	11 U	62	88
Benzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Bromochloromethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Bromodichloromethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Bromoform	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Bromomethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
2-Butanone	ug/kg	13 U	11 U	27	39
Carbon Disulfide	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Carbon Tetrachloride	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Chlorobenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Chloroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Chloroform	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Chloromethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Cyclohexane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Dibromochloromethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2-Dibromoethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2-Dichlorobenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,3-Dichlorobenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,4-Dichlorobenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Dichlorodifluoromethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,1-Dichloroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2-Dichloroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,1-Dichloroethene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
cis-1,2-Dichloroethene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
trans-1,2-Dichloroethene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2-Dichloropropane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
cis-1,3-Dichloropropene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
trans-1,3-Dichloropropene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Ethyl Benzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
2-Hexanone	ug/kg	13 U	11 U	11 U	11 U

Analysis/ Analyte	Units	4-FD	7-__	8-__	8-FD
Isopropylbenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Methyl Acetate	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Methyl tert-butyl ether	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Methylcyclohexane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Methylene Chloride	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
4-Methyl-2-Pentanone	ug/kg	13 U	11 U	11 U	11 U
Styrene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,1,2,2-Tetrachloroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Tetrachloroethene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Toluene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2,3-Trichlorobenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,2,4-Trichlorobenzene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,1,1-Trichloroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,1,2-Trichloroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Trichloroethene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Trichlorofluoromethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
Vinyl Chloride	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
m and/or p-Xylene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U
o-Xylene	ug/kg	6.6 U	5.4 U	5.4 U	5.4 U

Analysis/ Analyte	Units	10-__	11-__	12-__	13-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	11.4 U	11 U	11 U	10.8 UJ
2,4,5-TP	ug/kg	9.3 U	9 U	9 U	8.8 UJ
2,4-D	ug/kg	19.1 U	18.5 U	18.5 U	18.2 UJ
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
Aroclor 1016	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1221	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1232	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1242	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1248	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1254	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1260	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1262	ug/kg	39 U	36 U	36 U	37 U
Aroclor 1268	ug/kg	39 U	36 U	36 U	37 U
A-BHC	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
B-BHC	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
D-BHC	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
G-BHC	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
cis-Chlordane	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
trans-Chlordane	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
p,p'-DDD	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
p,p'-DDE	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
p,p'-DDT	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Dieldrin	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Endosulfan I	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
Endosulfan II	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Endosulfan Sulfate	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Endrin	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Endrin Aldehyde	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Endrin Ketone	ug/kg	3.9 U	3.6 U	3.6 U	3.7 U
Heptachlor	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
Heptachlor Epoxide	ug/kg	2.0 U	1.9 U	1.9 U	1.9 U
p,p'-Methoxychlor	ug/kg	20 U	19 U	19 U	19 U
Toxaphene	ug/kg	200 U	190 U	190 U	190 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	200 U	190 U	190 U	190 U
Acenaphthylene	ug/kg	200 U	190 U	190 U	190 U
Acetophenone	ug/kg	200 U	190 U	190 U	190 U
Anthracene	ug/kg	200 U	190 U	190 U	190 U
Atrazine	ug/kg	200 U	190 U	190 U	190 U
Benzaldehyde	ug/kg	200 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/kg	200 U	190 U	190 U	190 U
Benzo(a)pyrene	ug/kg	200 U	190 U	190 U	190 U
Benzo(b)fluoranthene	ug/kg	200 U	190 U	190 U	190 U
Benzo(g,h,i)perylene	ug/kg	200 U	190 U	190 U	190 U

Analysis/ Analyte	Units	10-__	11-__	12-__	13-__
Benzo(k)fluoranthene	ug/kg	200 U	190 U	190 U	190 U
Biphenyl	ug/kg	200 U	190 U	190 U	190 U
bis(2-Chloroethoxy)methane	ug/kg	200 U	190 U	190 U	190 U
bis(2-Chloroethyl)ether	ug/kg	200 U	190 U	190 U	190 U
bis(2-Chloroisopropyl)ether	ug/kg	200 U	190 U	190 U	190 U
bis(2-Ethylhexyl)phthalate	ug/kg	200 U	190 U	190 U	190 U
4-Bromophenyl-phenylether	ug/kg	200 U	190 U	190 U	190 U
Butylbenzylphthalate	ug/kg	200 U	190 U	190 U	190 U
Caprolactam	ug/kg	200 U	190 U	190 U	190 U
Carbazole	ug/kg	200 U	190 U	190 U	190 U
4-Chloro-3-methylphenol	ug/kg	200 U	190 U	190 U	190 U
4-Chloroaniline	ug/kg	200 U	190 U	190 U	190 U
2-Chloronaphthalene	ug/kg	200 U	190 U	190 U	190 U
2-Chlorophenol	ug/kg	200 U	190 U	190 U	190 U
4-Chlorophenyl-phenylether	ug/kg	200 U	190 U	190 U	190 U
Chrysene	ug/kg	200 U	190 U	190 U	190 U
Di-n-butylphthalate	ug/kg	200 U	190 U	190 U	190 U
Di-n-octylphthalate	ug/kg	200 U	190 U	190 U	190 U
Dibenz(a,h)anthracene	ug/kg	200 U	190 U	190 U	190 U
Dibenzofuran	ug/kg	200 U	190 U	190 U	190 U
3,3'-Dichlorobenzidine	ug/kg	200 U	190 U	190 U	190 U
2,4-Dichlorophenol	ug/kg	200 U	190 U	190 U	190 U
Diethylphthalate	ug/kg	200 U	190 U	190 U	190 U
2,4-Dimethylphenol	ug/kg	200 U	190 U	190 U	190 U
Dimethylphthalate	ug/kg	200 U	190 U	190 U	190 U
4,6-Dinitro-2-methylphenol	ug/kg	390 U	360 U	360 U	370 U
2,4-Dinitrophenol	ug/kg	390 U	360 U	360 U	370 U
2,4-Dinitrotoluene	ug/kg	200 U	190 U	190 U	190 U
2,6-Dinitrotoluene	ug/kg	200 U	190 U	190 U	190 U
Fluoranthene	ug/kg	200 U	190 U	190 U	190 U
Fluorene	ug/kg	200 U	190 U	190 U	190 U
Hexachlorobenzene	ug/kg	200 U	190 U	190 U	190 U
Hexachlorobutadiene	ug/kg	200 U	190 U	190 U	190 U
Hexachlorocyclopentadiene	ug/kg	200 U	190 U	190 U	190 U
Hexachloroethane	ug/kg	200 U	190 U	190 U	190 U
Indeno(1,2,3-cd)pyrene	ug/kg	200 U	190 U	190 U	190 U
Isophorone	ug/kg	200 U	190 U	190 U	190 U
2-Methylnaphthalene	ug/kg	200 U	190 U	190 U	190 U
2-Methylphenol	ug/kg	200 U	190 U	190 U	190 U
4-Methylphenol	ug/kg	200 U	190 U	190 U	190 U
Naphthalene	ug/kg	200 U	190 U	190 U	190 U
2-Nitroaniline	ug/kg	390 U	360 U	360 U	370 U
3-Nitroaniline	ug/kg	390 U	360 U	360 U	370 U
4-Nitroaniline	ug/kg	390 U	360 U	360 U	370 U
Nitrobenzene	ug/kg	200 U	190 U	190 U	190 U

Analysis/ Analyte	Units	10-__	11-__	12-__	13-__
2-Nitrophenol	ug/kg	200 U	190 U	190 U	190 U
4-Nitrophenol	ug/kg	390 U	360 U	360 U	370 U
N-nitroso-di-n-propylamine	ug/kg	200 U	190 U	190 U	190 U
N-nitrosodiphenylamine	ug/kg	200 U	190 U	190 U	190 U
Pentachlorophenol	ug/kg	390 UJ	360 UJ	360 UJ	370 UJ
Phenanthrene	ug/kg	200 U	190 U	190 U	190 U
Phenol	ug/kg	200 U	190 U	190 U	190 U
Pyrene	ug/kg	200 U	190 U	190 U	190 U
1,2,4,5-Tetrachlorobenzene	ug/kg	200 U	190 U	190 U	190 U
2,4,5-Trichlorophenol	ug/kg	200 U	190 U	190 U	190 U
2,4,6-Trichlorophenol	ug/kg	200 U	190 U	190 U	190 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	78.6 U	76 U	76 U	74.6 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	140	55	59	21
Benzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Bromochloromethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Bromodichloromethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Bromoform	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Bromomethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
2-Butanone	ug/kg	20	12 U	17	12 U
Carbon Disulfide	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Carbon Tetrachloride	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Chlorobenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Chloroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Chloroform	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Chloromethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Cyclohexane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Dibromochloromethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2-Dibromoethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2-Dichlorobenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,3-Dichlorobenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,4-Dichlorobenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Dichlorodifluoromethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,1-Dichloroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2-Dichloroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,1-Dichloroethene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
cis-1,2-Dichloroethene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
trans-1,2-Dichloroethene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2-Dichloropropane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
cis-1,3-Dichloropropene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
trans-1,3-Dichloropropene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Ethyl Benzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
2-Hexanone	ug/kg	13 U	12 U	11 U	12 U

Analysis/ Analyte	Units	10-__	11-__	12-__	13-__
Isopropylbenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Methyl Acetate	ug/kg	7.3	5.8 U	5.6 U	6.2 U
Methyl tert-butyl ether	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Methylcyclohexane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Methylene Chloride	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
4-Methyl-2-Pentanone	ug/kg	13 U	12 U	11 U	12 U
Styrene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,1,2,2-Tetrachloroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Tetrachloroethene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Toluene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2,3-Trichlorobenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,2,4-Trichlorobenzene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,1,1-Trichloroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,1,2-Trichloroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Trichloroethene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Trichlorofluoromethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
Vinyl Chloride	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
m and/or p-Xylene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U
o-Xylene	ug/kg	6.4 U	5.8 U	5.6 U	6.2 U

Analysis/ Analyte	Units	13-FD	15-__	16-__	17-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	10.8 U	11.8 UJ	11.7 U	11.8 U
2,4,5-TP	ug/kg	8.8 U	9.6 UJ	9.5 U	9.6 U
2,4-D	ug/kg	18.1 U	19.7 UJ	19.6 U	19.8 U
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
Aroclor 1016	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1221	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1232	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1242	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1248	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1254	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1260	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1262	ug/kg	36 U	40 U	38 U	40 U
Aroclor 1268	ug/kg	36 U	40 U	38 U	40 U
A-BHC	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
B-BHC	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
D-BHC	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
G-BHC	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
cis-Chlordane	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
trans-Chlordane	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
p,p'-DDD	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
p,p'-DDE	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
p,p'-DDT	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Dieldrin	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Endosulfan I	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
Endosulfan II	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Endosulfan Sulfate	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Endrin	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Endrin Aldehyde	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Endrin Ketone	ug/kg	3.6 U	4.0 U	3.8 U	4.0 U
Heptachlor	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
Heptachlor Epoxide	ug/kg	1.8 U	2.0 U	2.0 U	2.0 U
p,p'-Methoxychlor	ug/kg	18 U	20 U	20 U	20 U
Toxaphene	ug/kg	180 U	200 U	200 U	200 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	180 U	200 U	200 U	200 U
Acenaphthylene	ug/kg	180 U	200 U	200 U	200 U
Acetophenone	ug/kg	180 U	200 U	200 U	200 U
Anthracene	ug/kg	180 U	200 U	200 U	200 U
Atrazine	ug/kg	180 U	200 U	200 U	200 U
Benzaldehyde	ug/kg	180 U	200 U	200 U	200 U
Benzo(a)anthracene	ug/kg	180 U	200 U	200 U	200 U
Benzo(a)pyrene	ug/kg	180 U	200 U	200 U	200 U
Benzo(b)fluoranthene	ug/kg	180 U	200 U	200 U	200 U
Benzo(g,h,i)perylene	ug/kg	180 U	200 U	200 U	200 U

Analysis/ Analyte	Units	13-FD	15-__	16-__	17-__
Benzo(k)fluoranthene	ug/kg	180 U	200 U	200 U	200 U
Biphenyl	ug/kg	180 U	200 U	200 U	200 U
bis(2-Chloroethoxy)methane	ug/kg	180 U	200 U	200 U	200 U
bis(2-Chloroethyl)ether	ug/kg	180 U	200 U	200 U	200 U
bis(2-Chloroisopropyl)ether	ug/kg	180 U	200 U	200 U	200 U
bis(2-Ethylhexyl)phthalate	ug/kg	180 U	200 U	200 U	200 U
4-Bromophenyl-phenylether	ug/kg	180 U	200 U	200 U	200 U
Butylbenzylphthalate	ug/kg	180 U	200 U	200 U	200 U
Caprolactam	ug/kg	180 U	200 U	200 U	200 U
Carbazole	ug/kg	180 U	200 U	200 U	200 U
4-Chloro-3-methylphenol	ug/kg	180 U	200 U	200 U	200 U
4-Chloroaniline	ug/kg	180 U	200 U	200 U	200 U
2-Chloronaphthalene	ug/kg	180 U	200 U	200 U	200 U
2-Chlorophenol	ug/kg	180 U	200 U	200 U	200 U
4-Chlorophenyl-phenylether	ug/kg	180 U	200 U	200 U	200 U
Chrysene	ug/kg	180 U	200 U	200 U	200 U
Di-n-butylphthalate	ug/kg	180 U	200 U	200 U	200 U
Di-n-octylphthalate	ug/kg	180 U	200 U	200 U	200 U
Dibenz(a,h)anthracene	ug/kg	180 U	200 U	200 U	200 U
Dibenzofuran	ug/kg	180 U	200 U	200 U	200 U
3,3'-Dichlorobenzidine	ug/kg	180 U	200 U	200 U	200 U
2,4-Dichlorophenol	ug/kg	180 U	200 U	200 U	200 U
Diethylphthalate	ug/kg	180 U	200 U	200 U	200 U
2,4-Dimethylphenol	ug/kg	180 U	200 U	200 U	200 U
Dimethylphthalate	ug/kg	180 U	200 U	200 U	200 U
4,6-Dinitro-2-methylphenol	ug/kg	360 U	400 U	380 U	400 U
2,4-Dinitrophenol	ug/kg	360 U	400 U	380 U	400 U
2,4-Dinitrotoluene	ug/kg	180 U	200 U	200 U	200 U
2,6-Dinitrotoluene	ug/kg	180 U	200 U	200 U	200 U
Fluoranthene	ug/kg	180 U	200 U	200 U	200 U
Fluorene	ug/kg	180 U	200 U	200 U	200 U
Hexachlorobenzene	ug/kg	180 U	200 U	200 U	200 U
Hexachlorobutadiene	ug/kg	180 U	200 U	200 U	200 U
Hexachlorocyclopentadiene	ug/kg	180 U	200 U	200 U	200 U
Hexachloroethane	ug/kg	180 U	200 U	200 U	200 U
Indeno(1,2,3-cd)pyrene	ug/kg	180 U	200 U	200 U	200 U
Isophorone	ug/kg	180 U	200 U	200 U	200 U
2-Methylnaphthalene	ug/kg	180 U	200 U	200 U	200 U
2-Methylphenol	ug/kg	180 U	200 U	200 U	200 U
4-Methylphenol	ug/kg	180 U	200 U	200 U	200 U
Naphthalene	ug/kg	180 U	200 U	200 U	200 U
2-Nitroaniline	ug/kg	360 U	400 U	380 U	400 U
3-Nitroaniline	ug/kg	360 U	400 U	380 U	400 U
4-Nitroaniline	ug/kg	360 U	400 U	380 U	400 U
Nitrobenzene	ug/kg	180 U	200 U	200 U	200 U

Analysis/ Analyte	Units	13-FD	15-__	16-__	17-__
2-Nitrophenol	ug/kg	180 U	200 U	200 U	200 U
4-Nitrophenol	ug/kg	360 U	400 U	380 U	400 U
N-nitroso-di-n-propylamine	ug/kg	180 U	200 U	200 U	200 U
N-nitrosodiphenylamine	ug/kg	180 U	200 U	200 U	200 U
Pentachlorophenol	ug/kg	360 UJ	400 UJ	380 UJ	400 UJ
Phenanthrene	ug/kg	180 U	200 U	200 U	200 U
Phenol	ug/kg	180 U	200 U	200 U	200 U
Pyrene	ug/kg	180 U	200 U	200 U	200 U
1,2,4,5-Tetrachlorobenzene	ug/kg	180 U	200 U	200 U	200 U
2,4,5-Trichlorophenol	ug/kg	180 U	200 U	200 U	200 U
2,4,6-Trichlorophenol	ug/kg	180 U	200 U	200 U	200 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	74.3 U	81.1 U	80.5 U	81.5 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	16	17	64	29
Benzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Bromochloromethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Bromodichloromethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Bromoform	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Bromomethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
2-Butanone	ug/kg	8.7 U	10 U	17	13 U
Carbon Disulfide	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Carbon Tetrachloride	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Chlorobenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Chloroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Chloroform	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Chloromethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Cyclohexane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2-Dibromo-3-Chloropropane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Dibromochloromethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2-Dibromoethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2-Dichlorobenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,3-Dichlorobenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,4-Dichlorobenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Dichlorodifluoromethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,1-Dichloroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2-Dichloroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,1-Dichloroethene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
cis-1,2-Dichloroethene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
trans-1,2-Dichloroethene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2-Dichloropropane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
cis-1,3-Dichloropropene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
trans-1,3-Dichloropropene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Ethyl Benzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
2-Hexanone	ug/kg	8.7 U	10 U	10 U	13 U

Analysis/ Analyte	Units	13-FD	15-__	16-__	17-__
Isopropylbenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Methyl Acetate	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Methyl tert-butyl ether	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Methylcyclohexane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Methylene Chloride	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
4-Methyl-2-Pentanone	ug/kg	8.7 U	10 U	10 U	13 U
Styrene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,1,2,2-Tetrachloroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Tetrachloroethene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Toluene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2,3-Trichlorobenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,2,4-Trichlorobenzene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,1,1-Trichloroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,1,2-Trichloroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Trichloroethene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Trichlorofluoromethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
1,1,2-Trichlorotrifluoroethane	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
Vinyl Chloride	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
m and/or p-Xylene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U
o-Xylene	ug/kg	4.4 U	5.1 U	5.2 U	6.6 U

Analysis/ Analyte	Units	18-__	19-__	19-FD	21-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	11.7 U	12.1 U	12 U	12.1 U
2,4,5-TP	ug/kg	9.5 U	9.8 U	9.8 U	9.8 U
2,4-D	ug/kg	19.6 U	20.2 U	20.1 U	20.2 U
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
Aroclor 1016	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1221	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1232	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1242	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1248	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1254	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1260	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1262	ug/kg	40 U	41 U	41 U	41 U
Aroclor 1268	ug/kg	40 U	41 U	41 U	41 U
A-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
B-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
D-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
G-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
cis-Chlordane	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
trans-Chlordane	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
p,p'-DDD	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
p,p'-DDE	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
p,p'-DDT	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Dieldrin	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Endosulfan I	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
Endosulfan II	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Endosulfan Sulfate	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Endrin	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Endrin Aldehyde	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Endrin Ketone	ug/kg	4.0 U	4.1 U	4.1 U	4.1 U
Heptachlor	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
Heptachlor Epoxide	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
p,p'-Methoxychlor	ug/kg	21 U	21 U	21 U	21 U
Toxaphene	ug/kg	210 U	210 U	210 U	210 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	210 U	210 U	210 U	210 U
Acenaphthylene	ug/kg	210 U	210 U	210 U	210 U
Acetophenone	ug/kg	210 U	210 U	210 U	210 U
Anthracene	ug/kg	210 U	210 U	210 U	210 U
Atrazine	ug/kg	210 U	210 U	210 U	210 U
Benzaldehyde	ug/kg	210 U	210 U	210 U	210 U
Benzo(a)anthracene	ug/kg	210 U	210 U	210 U	210 U
Benzo(a)pyrene	ug/kg	210 U	210 U	210 U	210 U
Benzo(b)fluoranthene	ug/kg	210 U	210 U	210 U	210 U
Benzo(g,h,i)perylene	ug/kg	210 U	210 U	210 U	210 U

Analysis/ Analyte	Units	18-__	19-__	19-FD	21-__
Benzo(k)fluoranthene	ug/kg	210 U	210 U	210 U	210 U
Biphenyl	ug/kg	210 U	210 U	210 U	210 U
bis(2-Chloroethoxy)methane	ug/kg	210 U	210 U	210 U	210 U
bis(2-Chloroethyl)ether	ug/kg	210 U	210 U	210 U	210 U
bis(2-Chloroisopropyl)ether	ug/kg	210 U	210 U	210 U	210 U
bis(2-Ethylhexyl)phthalate	ug/kg	210 U	210 U	210 U	210 U
4-Bromophenyl-phenylether	ug/kg	210 U	210 U	210 U	210 U
Butylbenzylphthalate	ug/kg	210 U	210 U	210 U	210 U
Caprolactam	ug/kg	210 U	210 U	210 U	210 U
Carbazole	ug/kg	210 U	210 U	210 U	210 U
4-Chloro-3-methylphenol	ug/kg	210 U	210 U	210 U	210 U
4-Chloroaniline	ug/kg	210 U	210 U	210 U	210 U
2-Chloronaphthalene	ug/kg	210 U	210 U	210 U	210 U
2-Chlorophenol	ug/kg	210 U	210 U	210 U	210 U
4-Chlorophenyl-phenylether	ug/kg	210 U	210 U	210 U	210 U
Chrysene	ug/kg	210 U	210 U	210 U	210 U
Di-n-butylphthalate	ug/kg	210 U	210 U	210 U	210 U
Di-n-octylphthalate	ug/kg	210 U	210 U	210 U	210 U
Dibenz(a,h)anthracene	ug/kg	210 U	210 U	210 U	210 U
Dibenzofuran	ug/kg	210 U	210 U	210 U	210 U
3,3'-Dichlorobenzidine	ug/kg	210 U	210 U	210 U	210 U
2,4-Dichlorophenol	ug/kg	210 U	210 U	210 U	210 U
Diethylphthalate	ug/kg	210 U	210 U	210 U	210 U
2,4-Dimethylphenol	ug/kg	210 U	210 U	210 U	210 U
Dimethylphthalate	ug/kg	210 U	210 U	210 U	210 U
4,6-Dinitro-2-methylphenol	ug/kg	400 U	410 U	410 U	410 U
2,4-Dinitrophenol	ug/kg	400 U	410 U	410 U	410 U
2,4-Dinitrotoluene	ug/kg	210 U	210 U	210 U	210 U
2,6-Dinitrotoluene	ug/kg	210 U	210 U	210 U	210 U
Fluoranthene	ug/kg	210 U	210 U	210 U	210 U
Fluorene	ug/kg	210 U	210 U	210 U	210 U
Hexachlorobenzene	ug/kg	210 U	210 U	210 U	210 U
Hexachlorobutadiene	ug/kg	210 U	210 U	210 U	210 U
Hexachlorocyclopentadiene	ug/kg	210 U	210 U	210 U	210 U
Hexachloroethane	ug/kg	210 U	210 U	210 U	210 U
Indeno(1,2,3-cd)pyrene	ug/kg	210 U	210 U	210 U	210 U
Isophorone	ug/kg	210 U	210 U	210 U	210 U
2-Methylnaphthalene	ug/kg	210 U	210 U	210 U	210 U
2-Methylphenol	ug/kg	210 U	210 U	210 U	210 U
4-Methylphenol	ug/kg	210 U	210 U	210 U	210 U
Naphthalene	ug/kg	210 U	210 U	210 U	210 U
2-Nitroaniline	ug/kg	400 U	410 U	410 U	410 U
3-Nitroaniline	ug/kg	400 U	410 U	410 U	410 U
4-Nitroaniline	ug/kg	400 U	410 U	410 U	410 U
Nitrobenzene	ug/kg	210 U	210 U	210 U	210 U

Analysis/ Analyte	Units	18-__	19-__	19-FD	21-__
2-Nitrophenol	ug/kg	210 U	210 U	210 U	210 U
4-Nitrophenol	ug/kg	400 U	410 U	410 U	410 U
N-nitroso-di-n-propylamine	ug/kg	210 U	210 U	210 U	210 U
N-nitrosodiphenylamine	ug/kg	210 U	210 U	210 U	210 U
Pentachlorophenol	ug/kg	400 UJ	410 UJ	410 UJ	410 UJ
Phenanthrene	ug/kg	210 U	210 U	210 U	210 U
Phenol	ug/kg	210 U	210 U	210 U	210 U
Pyrene	ug/kg	210 U	210 U	210 U	210 U
1,2,4,5-Tetrachlorobenzene	ug/kg	210 U	210 U	210 U	210 U
2,4,5-Trichlorophenol	ug/kg	210 U	210 U	210 U	210 U
2,4,6-Trichlorophenol	ug/kg	210 U	210 U	210 U	210 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	80.6 U	83 U	82.8 U	83.1 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	72	87	170	30
Benzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Bromochloromethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Bromodichloromethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Bromoform	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Bromomethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
2-Butanone	ug/kg	14	25	48	16 U
Carbon Disulfide	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Carbon Tetrachloride	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Chlorobenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Chloroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Chloroform	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Chloromethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Cyclohexane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Dibromochloromethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2-Dibromoethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2-Dichlorobenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,3-Dichlorobenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,4-Dichlorobenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Dichlorodifluoromethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,1-Dichloroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2-Dichloroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,1-Dichloroethene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
cis-1,2-Dichloroethene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
trans-1,2-Dichloroethene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2-Dichloropropane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
cis-1,3-Dichloropropene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
trans-1,3-Dichloropropene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Ethyl Benzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
2-Hexanone	ug/kg	11 U	13 U	24 U	16 U

Analysis/ Analyte	Units	18-__	19-__	19-FD	21-__
Isopropylbenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Methyl Acetate	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Methyl tert-butyl ether	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Methylcyclohexane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Methylene Chloride	ug/kg	5.7 U	6.4 U	12 U	8.2 U
4-Methyl-2-Pentanone	ug/kg	11 U	13 U	24 U	16 U
Styrene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,1,2,2-Tetrachloroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Tetrachloroethene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Toluene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2,3-Trichlorobenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,2,4-Trichlorobenzene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,1,1-Trichloroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,1,2-Trichloroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Trichloroethene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Trichlorofluoromethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.7 U	6.4 U	12 U	8.2 U
Vinyl Chloride	ug/kg	5.7 U	6.4 U	12 U	8.2 U
m and/or p-Xylene	ug/kg	5.7 U	6.4 U	12 U	8.2 U
o-Xylene	ug/kg	5.7 U	6.4 U	12 U	8.2 U

Analysis/ Analyte	Units	22-__	23-__	24-__	25-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	12.1 U	11.9 U	11.8 U	11.8 U
2,4,5-TP	ug/kg	9.9 U	9.7 U	9.6 U	9.6 U
2,4-D	ug/kg	20.2 U	20 U	19.7 U	19.8 U
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
Aroclor 1016	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1221	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1232	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1242	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1248	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1254	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1260	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1262	ug/kg	40 U	41 U	40 U	40 U
Aroclor 1268	ug/kg	40 U	41 U	40 U	40 U
A-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
B-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
D-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
G-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
cis-Chlordane	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
trans-Chlordane	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
p,p'-DDD	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
p,p'-DDE	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
p,p'-DDT	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Dieldrin	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Endosulfan I	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
Endosulfan II	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Endosulfan Sulfate	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Endrin	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Endrin Aldehyde	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Endrin Ketone	ug/kg	4.0 U	4.1 U	4.0 U	4.0 U
Heptachlor	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
Heptachlor Epoxide	ug/kg	2.1 U	2.1 U	2.1 U	2.1 U
p,p'-Methoxychlor	ug/kg	21 U	21 U	21 U	21 U
Toxaphene	ug/kg	210 U	210 U	210 U	210 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	210 U	210 U	210 U	210 U
Acenaphthylene	ug/kg	210 U	210 U	210 U	210 U
Acetophenone	ug/kg	210 U	210 U	210 U	210 U
Anthracene	ug/kg	210 U	210 U	210 U	210 U
Atrazine	ug/kg	210 U	210 U	210 U	210 U
Benzaldehyde	ug/kg	210 U	210 U	210 U	210 U
Benzo(a)anthracene	ug/kg	210 U	210 U	210 U	210 U
Benzo(a)pyrene	ug/kg	210 U	210 U	210 U	210 U
Benzo(b)fluoranthene	ug/kg	210 U	210 U	210 U	210 U
Benzo(g,h,i)perylene	ug/kg	210 U	210 U	210 U	210 U

Analysis/ Analyte	Units	22-__	23-__	24-__	25-__
Benzo(k)fluoranthene	ug/kg	210 U	210 U	210 U	210 U
Biphenyl	ug/kg	210 U	210 U	210 U	210 U
bis(2-Chloroethoxy)methane	ug/kg	210 U	210 U	210 U	210 U
bis(2-Chloroethyl)ether	ug/kg	210 U	210 U	210 U	210 U
bis(2-Chloroisopropyl)ether	ug/kg	210 U	210 U	210 U	210 U
bis(2-Ethylhexyl)phthalate	ug/kg	210 U	210 U	210 U	210 U
4-Bromophenyl-phenylether	ug/kg	210 U	210 U	210 U	210 U
Butylbenzylphthalate	ug/kg	210 U	210 U	210 U	210 U
Caprolactam	ug/kg	210 U	210 U	210 U	210 U
Carbazole	ug/kg	210 U	210 U	210 U	210 U
4-Chloro-3-methylphenol	ug/kg	210 U	210 U	210 U	210 U
4-Chloroaniline	ug/kg	210 U	210 U	210 U	210 U
2-Chloronaphthalene	ug/kg	210 U	210 U	210 U	210 U
2-Chlorophenol	ug/kg	210 U	210 U	210 U	210 U
4-Chlorophenyl-phenylether	ug/kg	210 U	210 U	210 U	210 U
Chrysene	ug/kg	210 U	210 U	210 U	210 U
Di-n-butylphthalate	ug/kg	210 U	210 U	210 U	210 U
Di-n-octylphthalate	ug/kg	210 U	210 U	210 U	210 U
Dibenz(a,h)anthracene	ug/kg	210 U	210 U	210 U	210 U
Dibenzofuran	ug/kg	210 U	210 U	210 U	210 U
3,3'-Dichlorobenzidine	ug/kg	210 U	210 U	210 U	210 U
2,4-Dichlorophenol	ug/kg	210 U	210 U	210 U	210 U
Diethylphthalate	ug/kg	210 U	210 U	210 U	210 U
2,4-Dimethylphenol	ug/kg	210 U	210 U	210 U	210 U
Dimethylphthalate	ug/kg	210 U	210 U	210 U	210 U
4,6-Dinitro-2-methylphenol	ug/kg	400 U	410 U	400 U	400 U
2,4-Dinitrophenol	ug/kg	400 U	410 U	400 U	400 U
2,4-Dinitrotoluene	ug/kg	210 U	210 U	210 U	210 U
2,6-Dinitrotoluene	ug/kg	210 U	210 U	210 U	210 U
Fluoranthene	ug/kg	210 U	210 U	210 U	210 U
Fluorene	ug/kg	210 U	210 U	210 U	210 U
Hexachlorobenzene	ug/kg	210 U	210 U	210 U	210 U
Hexachlorobutadiene	ug/kg	210 U	210 U	210 U	210 U
Hexachlorocyclopentadiene	ug/kg	210 U	210 U	210 U	210 U
Hexachloroethane	ug/kg	210 U	210 U	210 U	210 U
Indeno(1,2,3-cd)pyrene	ug/kg	210 U	210 U	210 U	210 U
Isophorone	ug/kg	210 U	210 U	210 U	210 U
2-Methylnaphthalene	ug/kg	210 U	210 U	210 U	210 U
2-Methylphenol	ug/kg	210 U	210 U	210 U	210 U
4-Methylphenol	ug/kg	210 U	210 U	210 U	210 U
Naphthalene	ug/kg	210 U	210 U	210 U	210 U
2-Nitroaniline	ug/kg	400 U	410 U	400 U	400 U
3-Nitroaniline	ug/kg	400 U	410 U	400 U	400 U
4-Nitroaniline	ug/kg	400 U	410 U	400 U	400 U
Nitrobenzene	ug/kg	210 U	210 U	210 U	210 U

Analysis/ Analyte	Units	22-__	23-__	24-__	25-__
2-Nitrophenol	ug/kg	210 U	210 U	210 U	210 U
4-Nitrophenol	ug/kg	400 U	410 U	400 U	400 U
N-nitroso-di-n-propylamine	ug/kg	210 U	210 U	210 U	210 U
N-nitrosodiphenylamine	ug/kg	210 U	210 U	210 U	210 U
Pentachlorophenol	ug/kg	400 UJ	410 UJ	400 UJ	400 UJ
Phenanthrene	ug/kg	210 U	210 U	210 U	210 U
Phenol	ug/kg	210 U	210 U	210 U	210 U
Pyrene	ug/kg	210 U	210 U	210 U	210 U
1,2,4,5-Tetrachlorobenzene	ug/kg	210 U	210 U	210 U	210 U
2,4,5-Trichlorophenol	ug/kg	210 U	210 U	210 U	210 U
2,4,6-Trichlorophenol	ug/kg	210 U	210 U	210 U	210 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	83.2 U	82.1 U	81 U	81.5 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	27	60	26	48
Benzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Bromochloromethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Bromodichloromethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Bromoform	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Bromomethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
2-Butanone	ug/kg	12 U	19	11 U	12
Carbon Disulfide	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Carbon Tetrachloride	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Chlorobenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Chloroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Chloroform	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Chloromethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Cyclohexane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Dibromochloromethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2-Dibromoethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2-Dichlorobenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,3-Dichlorobenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,4-Dichlorobenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Dichlorodifluoromethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,1-Dichloroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2-Dichloroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,1-Dichloroethene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
cis-1,2-Dichloroethene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
trans-1,2-Dichloroethene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2-Dichloropropane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
cis-1,3-Dichloropropene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
trans-1,3-Dichloropropene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Ethyl Benzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
2-Hexanone	ug/kg	12 U	12 U	11 U	11 U

Analysis/ Analyte	Units	22-__	23-__	24-__	25-__
Isopropylbenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Methyl Acetate	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Methyl tert-butyl ether	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Methylcyclohexane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Methylene Chloride	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
4-Methyl-2-Pentanone	ug/kg	12 U	12 U	11 U	11 U
Styrene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,1,2,2-Tetrachloroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Tetrachloroethene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Toluene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2,3-Trichlorobenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,2,4-Trichlorobenzene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,1,1-Trichloroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,1,2-Trichloroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Trichloroethene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Trichlorofluoromethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
Vinyl Chloride	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
m and/or p-Xylene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U
o-Xylene	ug/kg	5.8 U	6.1 U	5.6 U	5.6 U

Analysis/ Analyte	Units	26-__	27-__	28-__	29-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	11.2 U	12.2 U		
2,4,5-TP	ug/kg	9.2 U	9.9 U		
2,4-D	ug/kg	18.8 U	20.4 U		
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
Aroclor 1016	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1221	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1232	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1242	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1248	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1254	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1260	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1262	ug/kg	41 U	42 U	40 U	42 U
Aroclor 1268	ug/kg	41 U	42 U	40 U	42 U
A-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
B-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
D-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
G-BHC	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
cis-Chlordane	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
trans-Chlordane	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
p,p'-DDD	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
p,p'-DDE	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
p,p'-DDT	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Dieldrin	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Endosulfan I	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
Endosulfan II	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Endosulfan Sulfate	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Endrin	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Endrin Aldehyde	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Endrin Ketone	ug/kg	4.1 U	4.2 U	4.0 U	4.2 U
Heptachlor	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
Heptachlor Epoxide	ug/kg	2.1 U	2.1 U	2.1 U	2.2 U
p,p'-Methoxychlor	ug/kg	21 U	21 U	21 U	22 U
Toxaphene	ug/kg	210 U	210 U	210 U	220 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	210 U	210 U		
Acenaphthylene	ug/kg	210 U	210 U		
Acetophenone	ug/kg	210 U	210 U		
Anthracene	ug/kg	210 U	210 U		
Atrazine	ug/kg	210 U	210 U		
Benzaldehyde	ug/kg	210 U	210 U		
Benzo(a)anthracene	ug/kg	210 U	210 U		
Benzo(a)pyrene	ug/kg	210 U	210 U		
Benzo(b)fluoranthene	ug/kg	210 U	210 U		
Benzo(g,h,i)perylene	ug/kg	210 U	210 U		

Analysis/ Analyte	Units	26-__	27-__	28-__	29-__
Benzo(k)fluoranthene	ug/kg	210 U	210 U		
Biphenyl	ug/kg	210 U	210 U		
bis(2-Chloroethoxy)methane	ug/kg	210 U	210 U		
bis(2-Chloroethyl)ether	ug/kg	210 U	210 U		
bis(2-Chloroisopropyl)ether	ug/kg	210 U	210 U		
bis(2-Ethylhexyl)phthalate	ug/kg	210 U	210 U		
4-Bromophenyl-phenylether	ug/kg	210 U	210 U		
Butylbenzylphthalate	ug/kg	210 U	210 U		
Caprolactam	ug/kg	210 U	210 U		
Carbazole	ug/kg	210 U	210 U		
4-Chloro-3-methylphenol	ug/kg	210 U	210 U		
4-Chloroaniline	ug/kg	210 U	210 U		
2-Chloronaphthalene	ug/kg	210 U	210 U		
2-Chlorophenol	ug/kg	210 U	210 U		
4-Chlorophenyl-phenylether	ug/kg	210 U	210 U		
Chrysene	ug/kg	210 U	210 U		
Di-n-butylphthalate	ug/kg	210 U	210 U		
Di-n-octylphthalate	ug/kg	210 U	210 U		
Dibenz(a,h)anthracene	ug/kg	210 U	210 U		
Dibenzofuran	ug/kg	210 U	210 U		
3,3'-Dichlorobenzidine	ug/kg	210 U	210 U		
2,4-Dichlorophenol	ug/kg	210 U	210 U		
Diethylphthalate	ug/kg	210 U	210 U		
2,4-Dimethylphenol	ug/kg	210 U	210 U		
Dimethylphthalate	ug/kg	210 U	210 U		
4,6-Dinitro-2-methylphenol	ug/kg	410 U	420 U		
2,4-Dinitrophenol	ug/kg	410 U	420 U		
2,4-Dinitrotoluene	ug/kg	210 U	210 U		
2,6-Dinitrotoluene	ug/kg	210 U	210 U		
Fluoranthene	ug/kg	210 U	210 U		
Fluorene	ug/kg	210 U	210 U		
Hexachlorobenzene	ug/kg	210 U	210 U		
Hexachlorobutadiene	ug/kg	210 U	210 U		
Hexachlorocyclopentadiene	ug/kg	210 U	210 U		
Hexachloroethane	ug/kg	210 U	210 U		
Indeno(1,2,3-cd)pyrene	ug/kg	210 U	210 U		
Isophorone	ug/kg	210 U	210 U		
2-Methylnaphthalene	ug/kg	210 U	210 U		
2-Methylphenol	ug/kg	210 U	210 U		
4-Methylphenol	ug/kg	210 U	210 U		
Naphthalene	ug/kg	210 U	210 U		
2-Nitroaniline	ug/kg	410 U	420 U		
3-Nitroaniline	ug/kg	410 U	420 U		
4-Nitroaniline	ug/kg	410 U	420 U		
Nitrobenzene	ug/kg	210 U	210 U		

Analysis/ Analyte	Units	26-__	27-__	28-__	29-__
2-Nitrophenol	ug/kg	210 U	210 U		
4-Nitrophenol	ug/kg	410 U	420 U		
N-nitroso-di-n-propylamine	ug/kg	210 U	210 U		
N-nitrosodiphenylamine	ug/kg	210 U	210 U		
Pentachlorophenol	ug/kg	410 UJ	420 UJ		
Phenanthrene	ug/kg	210 U	210 U		
Phenol	ug/kg	210 U	210 U		
Pyrene	ug/kg	210 U	210 U		
1,2,4,5-Tetrachlorobenzene	ug/kg	210 U	210 U		
2,4,5-Trichlorophenol	ug/kg	210 U	210 U		
2,4,6-Trichlorophenol	ug/kg	210 U	210 U		
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	77.5 U	83.8 U		
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	53	77		
Benzene	ug/kg	6.6 U	6.1 U		
Bromochloromethane	ug/kg	6.6 U	6.1 U		
Bromodichloromethane	ug/kg	6.6 U	6.1 U		
Bromoform	ug/kg	6.6 U	6.1 U		
Bromomethane	ug/kg	6.6 U	6.1 U		
2-Butanone	ug/kg	21	23		
Carbon Disulfide	ug/kg	6.6 U	6.1 U		
Carbon Tetrachloride	ug/kg	6.6 U	6.1 U		
Chlorobenzene	ug/kg	6.6 U	6.1 U		
Chloroethane	ug/kg	6.6 U	6.1 U		
Chloroform	ug/kg	6.6 U	6.1 U		
Chloromethane	ug/kg	6.6 U	6.1 U		
Cyclohexane	ug/kg	6.6 U	6.1 U		
1,2-Dibromo-3-Chloropropane	ug/kg	6.6 U	6.1 U		
Dibromochloromethane	ug/kg	6.6 U	6.1 U		
1,2-Dibromoethane	ug/kg	6.6 U	6.1 U		
1,2-Dichlorobenzene	ug/kg	6.6 U	6.1 U		
1,3-Dichlorobenzene	ug/kg	6.6 U	6.1 U		
1,4-Dichlorobenzene	ug/kg	6.6 U	6.1 U		
Dichlorodifluoromethane	ug/kg	6.6 U	6.1 U		
1,1-Dichloroethane	ug/kg	6.6 U	6.1 U		
1,2-Dichloroethane	ug/kg	6.6 U	6.1 U		
1,1-Dichloroethene	ug/kg	6.6 U	6.1 U		
cis-1,2-Dichloroethene	ug/kg	6.6 U	6.1 U		
trans-1,2-Dichloroethene	ug/kg	6.6 U	6.1 U		
1,2-Dichloropropane	ug/kg	6.6 U	6.1 U		
cis-1,3-Dichloropropene	ug/kg	6.6 U	6.1 U		
trans-1,3-Dichloropropene	ug/kg	6.6 U	6.1 U		
Ethyl Benzene	ug/kg	6.6 U	6.1 U		
2-Hexanone	ug/kg	13 U	12 U		

Analysis/ Analyte	Units	26-__	27-__	28-__	29-__
Isopropylbenzene	ug/kg	6.6 U	6.1 U		
Methyl Acetate	ug/kg	6.6 U	6.1 U		
Methyl tert-butyl ether	ug/kg	6.6 U	6.1 U		
Methylcyclohexane	ug/kg	6.6 U	6.1 U		
Methylene Chloride	ug/kg	6.6 U	6.1 U		
4-Methyl-2-Pentanone	ug/kg	13 U	12 U		
Styrene	ug/kg	6.6 U	6.1 U		
1,1,2,2-Tetrachloroethane	ug/kg	6.6 U	6.1 U		
Tetrachloroethene	ug/kg	6.6 U	6.1 U		
Toluene	ug/kg	6.6 U	6.1 U		
1,2,3-Trichlorobenzene	ug/kg	6.6 U	6.1 U		
1,2,4-Trichlorobenzene	ug/kg	6.6 U	6.1 U		
1,1,1-Trichloroethane	ug/kg	6.6 U	6.1 U		
1,1,2-Trichloroethane	ug/kg	6.6 U	6.1 U		
Trichloroethene	ug/kg	6.6 U	6.1 U		
Trichlorofluoromethane	ug/kg	6.6 U	6.1 U		
1,1,2-Trichlorotrifluoroethane	ug/kg	6.6 U	6.1 U		
Vinyl Chloride	ug/kg	6.6 U	6.1 U		
m and/or p-Xylene	ug/kg	6.6 U	6.1 U		
o-Xylene	ug/kg	6.6 U	6.1 U		

Analysis/ Analyte	Units	30-__	31-__	32-__	33-__
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
Aroclor 1016	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1221	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1232	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1242	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1248	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1254	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1260	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1262	ug/kg	42 U	40 U	40 U	41 U
Aroclor 1268	ug/kg	42 U	40 U	40 U	41 U
A-BHC	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
B-BHC	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
D-BHC	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
G-BHC	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
cis-Chlordane	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
trans-Chlordane	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
p,p'-DDD	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
p,p'-DDE	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
p,p'-DDT	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Dieldrin	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Endosulfan I	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
Endosulfan II	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Endosulfan Sulfate	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Endrin	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Endrin Aldehyde	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Endrin Ketone	ug/kg	4.2 U	4.0 U	4.0 U	4.1 U
Heptachlor	ug/kg	2.2 U	2.1 U	2.1 U	2.1 U
Heptachlor Epoxide	ug/kg	2.2 U	3.1 J	2.1 U	2.1 U
p,p'-Methoxychlor	ug/kg	22 U	21 U	21 U	21 U
Toxaphene	ug/kg	220 U	210 U	210 U	210 U

Analysis/ Analyte	Units	34-__	35-__	36-__	37-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	14.1 U			
2,4,5-TP	ug/kg	11.5 U			
2,4-D	ug/kg	23.6 U			
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.2 U			
Aroclor 1016	ug/kg	43 U			
Aroclor 1221	ug/kg	43 U			
Aroclor 1232	ug/kg	43 U			
Aroclor 1242	ug/kg	43 U			
Aroclor 1248	ug/kg	43 U			
Aroclor 1254	ug/kg	43 U			
Aroclor 1260	ug/kg	43 U			
Aroclor 1262	ug/kg	43 U			
Aroclor 1268	ug/kg	43 U			
A-BHC	ug/kg	2.2 U			
B-BHC	ug/kg	2.2 U			
D-BHC	ug/kg	2.2 U			
G-BHC	ug/kg	2.2 U			
cis-Chlordane	ug/kg	2.2 U			
trans-Chlordane	ug/kg	2.2 U			
p,p'-DDD	ug/kg	4.3 U			
p,p'-DDE	ug/kg	4.3 U			
p,p'-DDT	ug/kg	4.3 U			
Dieldrin	ug/kg	4.3 U			
Endosulfan I	ug/kg	2.2 U			
Endosulfan II	ug/kg	4.3 U			
Endosulfan Sulfate	ug/kg	4.3 U			
Endrin	ug/kg	4.3 U			
Endrin Aldehyde	ug/kg	4.3 U			
Endrin Ketone	ug/kg	4.3 U			
Heptachlor	ug/kg	2.2 U			
Heptachlor Epoxide	ug/kg	2.2 U			
p,p'-Methoxychlor	ug/kg	22 U			
Toxaphene	ug/kg	220 U			
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	220 U			
Acenaphthylene	ug/kg	220 U			
Acetophenone	ug/kg	220 U			
Anthracene	ug/kg	220 U			
Atrazine	ug/kg	220 U			
Benzaldehyde	ug/kg	220 U			
Benzo(a)anthracene	ug/kg	220 U			
Benzo(a)pyrene	ug/kg	220 U			
Benzo(b)fluoranthene	ug/kg	220 U			
Benzo(g,h,i)perylene	ug/kg	220 U			

Analysis/ Analyte	Units	34-__	35-__	36-__	37-__
Benzo(k)fluoranthene	ug/kg	220 U			
Biphenyl	ug/kg	220 U			
bis(2-Chloroethoxy)methane	ug/kg	220 U			
bis(2-Chloroethyl)ether	ug/kg	220 U			
bis(2-Chloroisopropyl)ether	ug/kg	220 U			
bis(2-Ethylhexyl)phthalate	ug/kg	220 U			
4-Bromophenyl-phenylether	ug/kg	220 U			
Butylbenzylphthalate	ug/kg	220 U			
Caprolactam	ug/kg	220 U			
Carbazole	ug/kg	220 U			
4-Chloro-3-methylphenol	ug/kg	220 U			
4-Chloroaniline	ug/kg	220 U			
2-Chloronaphthalene	ug/kg	220 U			
2-Chlorophenol	ug/kg	220 U			
4-Chlorophenyl-phenylether	ug/kg	220 U			
Chrysene	ug/kg	220 U			
Di-n-butylphthalate	ug/kg	220 U			
Di-n-octylphthalate	ug/kg	220 U			
Dibenz(a,h)anthracene	ug/kg	220 UJ			
Dibenzofuran	ug/kg	220 U			
3,3'-Dichlorobenzidine	ug/kg	220 U			
2,4-Dichlorophenol	ug/kg	220 U			
Diethylphthalate	ug/kg	220 U			
2,4-Dimethylphenol	ug/kg	220 U			
Dimethylphthalate	ug/kg	220 U			
4,6-Dinitro-2-methylphenol	ug/kg	430 U			
2,4-Dinitrophenol	ug/kg	430 U			
2,4-Dinitrotoluene	ug/kg	220 U			
2,6-Dinitrotoluene	ug/kg	220 U			
Fluoranthene	ug/kg	220 U			
Fluorene	ug/kg	220 U			
Hexachlorobenzene	ug/kg	220 U			
Hexachlorobutadiene	ug/kg	220 U			
Hexachlorocyclopentadiene	ug/kg	220 U			
Hexachloroethane	ug/kg	220 U			
Indeno(1,2,3-cd)pyrene	ug/kg	220 U			
Isophorone	ug/kg	220 U			
2-Methylnaphthalene	ug/kg	220 U			
2-Methylphenol	ug/kg	220 U			
4-Methylphenol	ug/kg	220 U			
Naphthalene	ug/kg	220 U			
2-Nitroaniline	ug/kg	430 U			
3-Nitroaniline	ug/kg	430 U			
4-Nitroaniline	ug/kg	430 U			
Nitrobenzene	ug/kg	220 U			

Analysis/ Analyte	Units	34-__	35-__	36-__	37-__
2-Nitrophenol	ug/kg	220 U			
4-Nitrophenol	ug/kg	430 U			
N-nitroso-di-n-propylamine	ug/kg	220 U			
N-nitrosodiphenylamine	ug/kg	220 U			
Pentachlorophenol	ug/kg	430 UJ			
Phenanthrene	ug/kg	220 U			
Phenol	ug/kg	220 U			
Pyrene	ug/kg	220 U			
1,2,4,5-Tetrachlorobenzene	ug/kg	220 U			
2,4,5-Trichlorophenol	ug/kg	220 U			
2,4,6-Trichlorophenol	ug/kg	220 U			
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	96.8 U			
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg		130	47	61
Benzene	ug/kg		6.8 U	6.1 U	6.4 U
Bromochloromethane	ug/kg		6.8 U	6.1 U	6.4 U
Bromodichloromethane	ug/kg		6.8 U	6.1 U	6.4 U
Bromoform	ug/kg		6.8 U	6.1 U	6.4 U
Bromomethane	ug/kg		6.8 U	6.1 U	6.4 U
2-Butanone	ug/kg		27	12 U	21
Carbon Disulfide	ug/kg		6.8 U	6.1 U	6.4 U
Carbon Tetrachloride	ug/kg		6.8 U	6.1 U	6.4 U
Chlorobenzene	ug/kg		6.8 U	6.1 U	6.4 U
Chloroethane	ug/kg		6.8 U	6.1 U	6.4 U
Chloroform	ug/kg		6.8 U	6.1 U	6.4 U
Chloromethane	ug/kg		6.8 U	6.1 U	6.4 U
Cyclohexane	ug/kg		6.8 U	6.1 U	6.4 U
1,2-Dibromo-3-Chloropropane	ug/kg		6.8 U	6.1 U	6.4 U
Dibromochloromethane	ug/kg		6.8 U	6.1 U	6.4 U
1,2-Dibromoethane	ug/kg		6.8 U	6.1 U	6.4 U
1,2-Dichlorobenzene	ug/kg		6.8 U	6.1 U	6.4 U
1,3-Dichlorobenzene	ug/kg		6.8 U	6.1 U	6.4 U
1,4-Dichlorobenzene	ug/kg		6.8 U	6.1 U	6.4 U
Dichlorodifluoromethane	ug/kg		6.8 U	6.1 U	6.4 U
1,1-Dichloroethane	ug/kg		6.8 U	6.1 U	6.4 U
1,2-Dichloroethane	ug/kg		6.8 U	6.1 U	6.4 U
1,1-Dichloroethene	ug/kg		6.8 U	6.1 U	6.4 U
cis-1,2-Dichloroethene	ug/kg		6.8 U	6.1 U	6.4 U
trans-1,2-Dichloroethene	ug/kg		6.8 U	6.1 U	6.4 U
1,2-Dichloropropane	ug/kg		6.8 U	6.1 U	6.4 U
cis-1,3-Dichloropropene	ug/kg		6.8 U	6.1 U	6.4 U
trans-1,3-Dichloropropene	ug/kg		6.8 U	6.1 U	6.4 U
Ethyl Benzene	ug/kg		6.8 U	6.1 U	6.4 U
2-Hexanone	ug/kg		14 U	12 U	13 U

Analysis/ Analyte	Units	34-__	35-__	36-__	37-__
Isopropylbenzene	ug/kg		6.8 U	6.1 U	6.4 U
Methyl Acetate	ug/kg		6.8 U	6.1 U	6.4 U
Methyl tert-butyl ether	ug/kg		6.8 U	6.1 U	6.4 U
Methylcyclohexane	ug/kg		6.8 U	6.1 U	6.4 U
Methylene Chloride	ug/kg		6.8 U	6.1 U	6.4 U
4-Methyl-2-Pentanone	ug/kg		14 U	12 U	13 U
Styrene	ug/kg		6.8 U	6.1 U	6.4 U
1,1,2,2-Tetrachloroethane	ug/kg		6.8 U	6.1 U	6.4 U
Tetrachloroethene	ug/kg		6.8 U	6.1 U	6.4 U
Toluene	ug/kg		6.8 U	6.1 U	6.4 U
1,2,3-Trichlorobenzene	ug/kg		6.8 U	6.1 U	6.4 U
1,2,4-Trichlorobenzene	ug/kg		6.8 U	6.1 U	6.4 U
1,1,1-Trichloroethane	ug/kg		6.8 U	6.1 U	6.4 U
1,1,2-Trichloroethane	ug/kg		6.8 U	6.1 U	6.4 U
Trichloroethene	ug/kg		6.8 U	6.1 U	6.4 U
Trichlorofluoromethane	ug/kg		6.8 U	6.1 U	6.4 U
1,1,2-Trichlorotrifluoroethane	ug/kg		6.8 U	6.1 U	6.4 U
Vinyl Chloride	ug/kg		6.8 U	6.1 U	6.4 U
m and/or p-Xylene	ug/kg		6.8 U	6.1 U	6.4 U
o-Xylene	ug/kg		6.8 U	6.1 U	6.4 U

Analysis/ Analyte	Units	38-__	39-__	40-__	41-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	43	13	55	26
Benzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Bromochloromethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Bromodichloromethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Bromoform	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Bromomethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
2-Butanone	ug/kg	16	11 U	12 U	12 U
Carbon Disulfide	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Carbon Tetrachloride	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Chlorobenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Chloroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Chloroform	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Chloromethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Cyclohexane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Dibromochloromethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2-Dibromoethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2-Dichlorobenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,3-Dichlorobenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,4-Dichlorobenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Dichlorodifluoromethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,1-Dichloroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2-Dichloroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,1-Dichloroethene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
cis-1,2-Dichloroethene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
trans-1,2-Dichloroethene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2-Dichloropropane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
cis-1,3-Dichloropropene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
trans-1,3-Dichloropropene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Ethyl Benzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
2-Hexanone	ug/kg	12 U	11 U	12 U	12 U
Isopropylbenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Methyl Acetate	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Methyl tert-butyl ether	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Methylcyclohexane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Methylene Chloride	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
4-Methyl-2-Pentanone	ug/kg	12 U	11 U	12 U	12 U
Styrene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,1,2,2-Tetrachloroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Tetrachloroethene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Toluene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2,3-Trichlorobenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,2,4-Trichlorobenzene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,1,1-Trichloroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,1,2-Trichloroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U

Analysis/ Analyte	Units	38-__	39-__	40-__	41-__
Trichloroethene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Trichlorofluoromethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
Vinyl Chloride	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
m and/or p-Xylene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U
o-Xylene	ug/kg	6.1 U	5.7 U	5.9 U	6.1 U

Analysis/ Analyte	Units	42-__	43-__	44-__	44-FD
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	35	36	29	25
Benzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Bromochloromethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Bromodichloromethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Bromoform	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Bromomethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
2-Butanone	ug/kg	16 U	13 U	13 U	13 U
Carbon Disulfide	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Carbon Tetrachloride	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Chlorobenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Chloroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Chloroform	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Chloromethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Cyclohexane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2-Dibromo-3-Chloropropane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Dibromochloromethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2-Dibromoethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2-Dichlorobenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,3-Dichlorobenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,4-Dichlorobenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Dichlorodifluoromethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,1-Dichloroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2-Dichloroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,1-Dichloroethene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
cis-1,2-Dichloroethene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
trans-1,2-Dichloroethene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2-Dichloropropane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
cis-1,3-Dichloropropene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
trans-1,3-Dichloropropene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Ethyl Benzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
2-Hexanone	ug/kg	16 U	13 U	13 U	13 U
Isopropylbenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Methyl Acetate	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Methyl tert-butyl ether	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Methylcyclohexane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Methylene Chloride	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
4-Methyl-2-Pentanone	ug/kg	16 U	13 U	13 U	13 U
Styrene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,1,2,2-Tetrachloroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Tetrachloroethene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Toluene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2,3-Trichlorobenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,2,4-Trichlorobenzene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,1,1-Trichloroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,1,2-Trichloroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U

Analysis/ Analyte	Units	42-__	43-__	44-__	44-FD
Trichloroethene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Trichlorofluoromethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
1,1,2-Trichlorotrifluoroethane	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
Vinyl Chloride	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
m and/or p-Xylene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U
o-Xylene	ug/kg	7.9 U	6.7 U	6.5 U	6.4 U

Analysis/ Analyte	Units	46-__	47-__	48-__	48-FD
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	29	26	40	68
Benzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Bromochloromethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Bromodichloromethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Bromoform	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Bromomethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
2-Butanone	ug/kg	10 U	13 U	12 U	12 U
Carbon Disulfide	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Carbon Tetrachloride	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Chlorobenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Chloroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Chloroform	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Chloromethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Cyclohexane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Dibromochloromethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2-Dibromoethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2-Dichlorobenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,3-Dichlorobenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,4-Dichlorobenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Dichlorodifluoromethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,1-Dichloroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2-Dichloroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,1-Dichloroethene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
cis-1,2-Dichloroethene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
trans-1,2-Dichloroethene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2-Dichloropropane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
cis-1,3-Dichloropropene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
trans-1,3-Dichloropropene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Ethyl Benzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
2-Hexanone	ug/kg	10 U	13 U	12 U	12 U
Isopropylbenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Methyl Acetate	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Methyl tert-butyl ether	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Methylcyclohexane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Methylene Chloride	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
4-Methyl-2-Pentanone	ug/kg	10 U	13 U	12 U	12 U
Styrene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,1,2,2-Tetrachloroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Tetrachloroethene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Toluene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2,3-Trichlorobenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,2,4-Trichlorobenzene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,1,1-Trichloroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,1,2-Trichloroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U

Analysis/ Analyte	Units	46-__	47-__	48-__	48-FD
Trichloroethene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Trichlorofluoromethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
Vinyl Chloride	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
m and/or p-Xylene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U
o-Xylene	ug/kg	5.1 U	6.4 U	5.9 U	6.2 U

Analysis/ Analyte	Units	50-__	51-__	52-__	53-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	66	100	80	44
Benzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Bromochloromethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Bromodichloromethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Bromoform	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Bromomethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
2-Butanone	ug/kg	17	17	17	14 U
Carbon Disulfide	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Carbon Tetrachloride	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Chlorobenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Chloroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Chloroform	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Chloromethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Cyclohexane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Dibromochloromethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2-Dibromoethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2-Dichlorobenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,3-Dichlorobenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,4-Dichlorobenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Dichlorodifluoromethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,1-Dichloroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2-Dichloroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,1-Dichloroethene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
cis-1,2-Dichloroethene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
trans-1,2-Dichloroethene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2-Dichloropropane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
cis-1,3-Dichloropropene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
trans-1,3-Dichloropropene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Ethyl Benzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
2-Hexanone	ug/kg	11 U	11 U	12 U	14 U
Isopropylbenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Methyl Acetate	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Methyl tert-butyl ether	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Methylcyclohexane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Methylene Chloride	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
4-Methyl-2-Pentanone	ug/kg	11 U	11 U	12 U	14 U
Styrene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,1,2,2-Tetrachloroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Tetrachloroethene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Toluene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2,3-Trichlorobenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,2,4-Trichlorobenzene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,1,1-Trichloroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,1,2-Trichloroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U

Analysis/ Analyte	Units	50-__	51-__	52-__	53-__
Trichloroethene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Trichlorofluoromethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
Vinyl Chloride	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
m and/or p-Xylene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U
o-Xylene	ug/kg	5.6 U	5.6 U	6.2 U	6.9 U

Analysis/ Analyte	Units	53-FD	55-__	56-__	57-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	46	81	140	100
Benzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Bromochloromethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Bromodichloromethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Bromoform	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Bromomethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
2-Butanone	ug/kg	12 U	19	24	19
Carbon Disulfide	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Carbon Tetrachloride	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Chlorobenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Chloroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Chloroform	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Chloromethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Cyclohexane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Dibromochloromethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2-Dibromoethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2-Dichlorobenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,3-Dichlorobenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,4-Dichlorobenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Dichlorodifluoromethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,1-Dichloroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2-Dichloroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,1-Dichloroethene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
cis-1,2-Dichloroethene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
trans-1,2-Dichloroethene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2-Dichloropropane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
cis-1,3-Dichloropropene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
trans-1,3-Dichloropropene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Ethyl Benzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
2-Hexanone	ug/kg	12 U	15 U	12 U	13 U
Isopropylbenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Methyl Acetate	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Methyl tert-butyl ether	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Methylcyclohexane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Methylene Chloride	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
4-Methyl-2-Pentanone	ug/kg	12 U	15 U	12 U	13 U
Styrene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,1,2,2-Tetrachloroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Tetrachloroethene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Toluene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2,3-Trichlorobenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,2,4-Trichlorobenzene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,1,1-Trichloroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,1,2-Trichloroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U

Analysis/ Analyte	Units	53-FD	55-__	56-__	57-__
Trichloroethene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Trichlorofluoromethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
Vinyl Chloride	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
m and/or p-Xylene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U
o-Xylene	ug/kg	6.2 U	7.4 U	5.9 U	6.3 U

Analysis/ Analyte	Units	58-__	59-__	60-__	60-FD
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	66	48	93	92
Benzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Bromochloromethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Bromodichloromethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Bromoform	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Bromomethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
2-Butanone	ug/kg	15 U	14	23	25
Carbon Disulfide	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Carbon Tetrachloride	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Chlorobenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Chloroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Chloroform	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Chloromethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Cyclohexane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Dibromochloromethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2-Dibromoethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2-Dichlorobenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,3-Dichlorobenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,4-Dichlorobenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Dichlorodifluoromethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,1-Dichloroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2-Dichloroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,1-Dichloroethene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
cis-1,2-Dichloroethene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
trans-1,2-Dichloroethene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2-Dichloropropane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
cis-1,3-Dichloropropene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
trans-1,3-Dichloropropene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Ethyl Benzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
2-Hexanone	ug/kg	15 U	13 U	12 U	12 U
Isopropylbenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Methyl Acetate	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Methyl tert-butyl ether	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Methylcyclohexane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Methylene Chloride	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
4-Methyl-2-Pentanone	ug/kg	15 U	13 U	12 U	12 U
Styrene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Tetrachloroethene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Toluene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2,3-Trichlorobenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,2,4-Trichlorobenzene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,1,1-Trichloroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,1,2-Trichloroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U

Analysis/ Analyte	Units	58-__	59-__	60-__	60-FD
Trichloroethene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Trichlorofluoromethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
Vinyl Chloride	ug/kg	7.7 UJ	6.3 U	6.2 U	5.9 UJ
m and/or p-Xylene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U
o-Xylene	ug/kg	7.7 U	6.3 U	6.2 U	5.9 U

Analysis/ Analyte	Units	62-__	63-__	64-__	65-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	61	62	100	84
Benzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Bromochloromethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Bromodichloromethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Bromoform	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Bromomethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
2-Butanone	ug/kg	15	12	23	20
Carbon Disulfide	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Carbon Tetrachloride	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Chlorobenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Chloroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Chloroform	ug/kg	13	5.1 U	7.2 U	5.3 U
Chloromethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Cyclohexane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2-Dibromo-3-Chloropropane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Dibromochloromethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2-Dibromoethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2-Dichlorobenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,3-Dichlorobenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,4-Dichlorobenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Dichlorodifluoromethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,1-Dichloroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2-Dichloroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,1-Dichloroethene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
cis-1,2-Dichloroethene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
trans-1,2-Dichloroethene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2-Dichloropropane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
cis-1,3-Dichloropropene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
trans-1,3-Dichloropropene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Ethyl Benzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
2-Hexanone	ug/kg	9.8 U	10 U	14 U	11 U
Isopropylbenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Methyl Acetate	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Methyl tert-butyl ether	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Methylcyclohexane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Methylene Chloride	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
4-Methyl-2-Pentanone	ug/kg	9.8 U	10 U	14 U	11 U
Styrene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,1,2,2-Tetrachloroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Tetrachloroethene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Toluene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2,3-Trichlorobenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,2,4-Trichlorobenzene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,1,1-Trichloroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,1,2-Trichloroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U

Analysis/ Analyte	Units	62-__	63-__	64-__	65-__
Trichloroethene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Trichlorofluoromethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
1,1,2-Trichlorotrifluoroethane	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
Vinyl Chloride	ug/kg	4.9 U	5.1 UJ	7.2 U	5.3 U
m and/or p-Xylene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U
o-Xylene	ug/kg	4.9 U	5.1 U	7.2 U	5.3 U

Analysis/ Analyte	Units	66-__	66-FD	68-__	69-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	67	68	99	31
Benzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Bromochloromethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Bromodichloromethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Bromoform	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Bromomethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
2-Butanone	ug/kg	17	19	26 U	15 U
Carbon Disulfide	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Carbon Tetrachloride	ug/kg	6.0 U	5.9 U	77	41
Chlorobenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Chloroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Chloroform	ug/kg	6.0 U	5.9 U	13 U	10
Chloromethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Cyclohexane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Dibromochloromethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2-Dibromoethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2-Dichlorobenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,3-Dichlorobenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,4-Dichlorobenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Dichlorodifluoromethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,1-Dichloroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2-Dichloroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,1-Dichloroethene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
cis-1,2-Dichloroethene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
trans-1,2-Dichloroethene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2-Dichloropropane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
cis-1,3-Dichloropropene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
trans-1,3-Dichloropropene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Ethyl Benzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
2-Hexanone	ug/kg	12 U	12 U	26 U	15 U
Isopropylbenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Methyl Acetate	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Methyl tert-butyl ether	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Methylcyclohexane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Methylene Chloride	ug/kg	6.0 U	5.9 U	13 U	7.5 U
4-Methyl-2-Pentanone	ug/kg	12 U	12 U	26 U	15 U
Styrene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,1,2,2-Tetrachloroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Tetrachloroethene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Toluene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2,3-Trichlorobenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,2,4-Trichlorobenzene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,1,1-Trichloroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,1,2-Trichloroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U

Analysis/ Analyte	Units	66-__	66-FD	68-__	69-__
Trichloroethene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Trichlorofluoromethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.0 U	5.9 U	13 U	7.5 U
Vinyl Chloride	ug/kg	6.0 U	5.9 U	13 U	7.5 U
m and/or p-Xylene	ug/kg	6.0 U	5.9 U	13 U	7.5 U
o-Xylene	ug/kg	6.0 U	5.9 U	13 U	7.5 U

Analysis/ Analyte	Units	70-__	71-__	71-FD	73-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	26	19	15	54
Benzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Bromochloromethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Bromodichloromethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Bromoform	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Bromomethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
2-Butanone	ug/kg	13 U	11 U	13 U	13 U
Carbon Disulfide	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Carbon Tetrachloride	ug/kg	73	7.7	15	6.5 U
Chlorobenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Chloroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Chloroform	ug/kg	11	10	18	6.5 U
Chloromethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Cyclohexane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Dibromochloromethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2-Dibromoethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2-Dichlorobenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,3-Dichlorobenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,4-Dichlorobenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Dichlorodifluoromethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,1-Dichloroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2-Dichloroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,1-Dichloroethene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
cis-1,2-Dichloroethene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
trans-1,2-Dichloroethene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2-Dichloropropane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
cis-1,3-Dichloropropene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
trans-1,3-Dichloropropene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Ethyl Benzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
2-Hexanone	ug/kg	13 U	11 U	13 U	13 U
Isopropylbenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Methyl Acetate	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Methyl tert-butyl ether	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Methylcyclohexane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Methylene Chloride	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
4-Methyl-2-Pentanone	ug/kg	13 U	11 U	13 U	13 U
Styrene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,1,2,2-Tetrachloroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Tetrachloroethene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Toluene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2,3-Trichlorobenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,2,4-Trichlorobenzene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,1,1-Trichloroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,1,2-Trichloroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U

Analysis/ Analyte	Units	70-__	71-__	71-FD	73-__
Trichloroethene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Trichlorofluoromethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
Vinyl Chloride	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
m and/or p-Xylene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U
o-Xylene	ug/kg	6.6 U	5.5 U	6.4 U	6.5 U

Analysis/ Analyte	Units	74-__	75-__	75-FD	77-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	45	74	65	79
Benzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Bromochloromethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Bromodichloromethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Bromoform	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Bromomethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
2-Butanone	ug/kg	12	19 U	18 U	13 U
Carbon Disulfide	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Carbon Tetrachloride	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Chlorobenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Chloroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Chloroform	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Chloromethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Cyclohexane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Dibromochloromethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2-Dibromoethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2-Dichlorobenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,3-Dichlorobenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,4-Dichlorobenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Dichlorodifluoromethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,1-Dichloroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2-Dichloroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,1-Dichloroethene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
cis-1,2-Dichloroethene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
trans-1,2-Dichloroethene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2-Dichloropropane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
cis-1,3-Dichloropropene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
trans-1,3-Dichloropropene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Ethyl Benzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
2-Hexanone	ug/kg	9.9 U	19 U	18 U	13 U
Isopropylbenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Methyl Acetate	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Methyl tert-butyl ether	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Methylcyclohexane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Methylene Chloride	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
4-Methyl-2-Pentanone	ug/kg	9.9 U	19 U	18 U	13 U
Styrene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,1,2,2-Tetrachloroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Tetrachloroethene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Toluene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2,3-Trichlorobenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,2,4-Trichlorobenzene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,1,1-Trichloroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,1,2-Trichloroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U

Analysis/ Analyte	Units	74-__	75-__	75-FD	77-__
Trichloroethene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Trichlorofluoromethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
Vinyl Chloride	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
m and/or p-Xylene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U
o-Xylene	ug/kg	5.0 U	9.4 U	9.2 U	6.5 U

Analysis/ Analyte	Units	78-__	79-__	80-__	81-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	44	34	47	42
Benzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Bromochloromethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Bromodichloromethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Bromoform	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Bromomethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
2-Butanone	ug/kg	12 U	11 U	12 U	10.0 U
Carbon Disulfide	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Carbon Tetrachloride	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Chlorobenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Chloroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Chloroform	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Chloromethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Cyclohexane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2-Dibromo-3-Chloropropane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Dibromochloromethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2-Dibromoethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2-Dichlorobenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,3-Dichlorobenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,4-Dichlorobenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Dichlorodifluoromethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,1-Dichloroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2-Dichloroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,1-Dichloroethene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
cis-1,2-Dichloroethene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
trans-1,2-Dichloroethene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2-Dichloropropane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
cis-1,3-Dichloropropene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
trans-1,3-Dichloropropene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Ethyl Benzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
2-Hexanone	ug/kg	12 U	11 U	12 U	10.0 U
Isopropylbenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Methyl Acetate	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Methyl tert-butyl ether	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Methylcyclohexane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Methylene Chloride	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
4-Methyl-2-Pentanone	ug/kg	12 U	11 U	12 U	10.0 U
Styrene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Tetrachloroethene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Toluene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2,3-Trichlorobenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,2,4-Trichlorobenzene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,1,1-Trichloroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,1,2-Trichloroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U

Analysis/ Analyte	Units	78-__	79-__	80-__	81-__
Trichloroethene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Trichlorofluoromethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
1,1,2-Trichlorotrifluoroethane	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
Vinyl Chloride	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
m and/or p-Xylene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U
o-Xylene	ug/kg	6.2 U	5.6 U	6.2 U	5.0 U

Analysis/ Analyte	Units	82-__	83-__	84-__	85-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	41	43	58	33
Benzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Bromochloromethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Bromodichloromethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Bromoform	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Bromomethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
2-Butanone	ug/kg	11 U	11 U	17	13 U
Carbon Disulfide	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Carbon Tetrachloride	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Chlorobenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Chloroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Chloroform	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Chloromethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Cyclohexane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Dibromochloromethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2-Dibromoethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2-Dichlorobenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,3-Dichlorobenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,4-Dichlorobenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Dichlorodifluoromethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,1-Dichloroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2-Dichloroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,1-Dichloroethene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
cis-1,2-Dichloroethene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
trans-1,2-Dichloroethene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2-Dichloropropane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
cis-1,3-Dichloropropene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
trans-1,3-Dichloropropene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Ethyl Benzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
2-Hexanone	ug/kg	11 U	11 U	12 U	13 U
Isopropylbenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Methyl Acetate	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Methyl tert-butyl ether	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Methylcyclohexane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Methylene Chloride	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
4-Methyl-2-Pentanone	ug/kg	11 U	11 U	12 U	13 U
Styrene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,1,2,2-Tetrachloroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Tetrachloroethene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Toluene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2,3-Trichlorobenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,2,4-Trichlorobenzene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,1,1-Trichloroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,1,2-Trichloroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U

Analysis/ Analyte	Units	82-__	83-__	84-__	85-__
Trichloroethene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Trichlorofluoromethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
Vinyl Chloride	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
m and/or p-Xylene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U
o-Xylene	ug/kg	5.4 U	5.6 U	5.8 U	6.3 U

Analysis/ Analyte	Units	86-__	87-__	88-__	89-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	92	20	11 U	39
Benzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Bromochloromethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Bromodichloromethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Bromoform	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Bromomethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
2-Butanone	ug/kg	17	10 U	11 U	14 U
Carbon Disulfide	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Carbon Tetrachloride	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Chlorobenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Chloroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Chloroform	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Chloromethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Cyclohexane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2-Dibromo-3-Chloropropane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Dibromochloromethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2-Dibromoethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2-Dichlorobenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,3-Dichlorobenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,4-Dichlorobenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Dichlorodifluoromethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,1-Dichloroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2-Dichloroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,1-Dichloroethene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
cis-1,2-Dichloroethene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
trans-1,2-Dichloroethene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2-Dichloropropane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
cis-1,3-Dichloropropene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
trans-1,3-Dichloropropene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Ethyl Benzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
2-Hexanone	ug/kg	17 U	10 U	11 U	14 U
Isopropylbenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Methyl Acetate	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Methyl tert-butyl ether	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Methylcyclohexane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Methylene Chloride	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
4-Methyl-2-Pentanone	ug/kg	17 U	10 U	11 U	14 U
Styrene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,1,2,2-Tetrachloroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Tetrachloroethene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Toluene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2,3-Trichlorobenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,2,4-Trichlorobenzene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,1,1-Trichloroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,1,2-Trichloroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U

Analysis/ Analyte	Units	86-__	87-__	88-__	89-__
Trichloroethene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Trichlorofluoromethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
1,1,2-Trichlorotrifluoroethane	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
Vinyl Chloride	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
m and/or p-Xylene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U
o-Xylene	ug/kg	8.4 U	5.1 U	5.7 U	7.1 U

Analysis/ Analyte	Units	90-__	91-__	92-__	92-FD
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	31	110	47	34
Benzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Bromochloromethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Bromodichloromethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Bromoform	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Bromomethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
2-Butanone	ug/kg	11 U	26	21	15 U
Carbon Disulfide	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Carbon Tetrachloride	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Chlorobenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Chloroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Chloroform	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Chloromethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Cyclohexane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Dibromochloromethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2-Dibromoethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2-Dichlorobenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,3-Dichlorobenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,4-Dichlorobenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Dichlorodifluoromethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,1-Dichloroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2-Dichloroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,1-Dichloroethene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
cis-1,2-Dichloroethene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
trans-1,2-Dichloroethene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2-Dichloropropane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
cis-1,3-Dichloropropene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
trans-1,3-Dichloropropene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Ethyl Benzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
2-Hexanone	ug/kg	11 U	12 U	17 U	15 U
Isopropylbenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Methyl Acetate	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Methyl tert-butyl ether	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Methylcyclohexane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Methylene Chloride	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
4-Methyl-2-Pentanone	ug/kg	11 U	12 U	17 U	15 U
Styrene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,1,2,2-Tetrachloroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Tetrachloroethene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Toluene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2,3-Trichlorobenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,2,4-Trichlorobenzene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,1,1-Trichloroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,1,2-Trichloroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U

Analysis/ Analyte	Units	90-__	91-__	92-__	92-FD
Trichloroethene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Trichlorofluoromethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
Vinyl Chloride	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
m and/or p-Xylene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U
o-Xylene	ug/kg	5.7 U	5.8 U	8.4 U	7.5 U

Analysis/ Analyte	Units	94-__	95-__	96-__	97-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	64	49	46	15
Benzene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Bromochloromethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Bromodichloromethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Bromoform	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
Bromomethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
2-Butanone	ug/kg	14	12	16	11 U
Carbon Disulfide	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Carbon Tetrachloride	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Chlorobenzene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Chloroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Chloroform	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Chloromethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Cyclohexane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,2-Dibromo-3-Chloropropane	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
Dibromochloromethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,2-Dibromoethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,2-Dichlorobenzene	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
1,3-Dichlorobenzene	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
1,4-Dichlorobenzene	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
Dichlorodifluoromethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,1-Dichloroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,2-Dichloroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,1-Dichloroethene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
cis-1,2-Dichloroethene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
trans-1,2-Dichloroethene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,2-Dichloropropane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
cis-1,3-Dichloropropene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
trans-1,3-Dichloropropene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Ethyl Benzene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
2-Hexanone	ug/kg	12 U	11 U	12 U	11 U
Isopropylbenzene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Methyl Acetate	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Methyl tert-butyl ether	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Methylcyclohexane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Methylene Chloride	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
4-Methyl-2-Pentanone	ug/kg	12 U	11 U	12 U	11 U
Styrene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,1,2,2-Tetrachloroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Tetrachloroethene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Toluene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,2,3-Trichlorobenzene	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
1,2,4-Trichlorobenzene	ug/kg	N/A R	5.5 U	6.2 U	5.3 U
1,1,1-Trichloroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,1,2-Trichloroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U

Analysis/ Analyte	Units	94-__	95-__	96-__	97-__
Trichloroethene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Trichlorofluoromethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
Vinyl Chloride	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
m and/or p-Xylene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U
o-Xylene	ug/kg	5.9 U	5.5 U	6.2 U	5.3 U

Analysis/ Analyte	Units	98-__	99-__	100-__	101-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg		11.5 U	11.7 U	11.1 U
2,4,5-TP	ug/kg		9.4 U	9.5 U	9.1 U
2,4-D	ug/kg		19.3 U	19.5 U	18.6 U
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg		2.1 U	2.0 U	2.0 U
Aroclor 1016	ug/kg		41 U	40 U	38 U
Aroclor 1221	ug/kg		41 U	40 U	38 U
Aroclor 1232	ug/kg		41 U	40 U	38 U
Aroclor 1242	ug/kg		41 U	40 U	38 U
Aroclor 1248	ug/kg		41 U	40 U	38 U
Aroclor 1254	ug/kg		41 U	40 U	38 U
Aroclor 1260	ug/kg		41 U	40 U	38 U
Aroclor 1262	ug/kg		41 U	40 U	38 U
Aroclor 1268	ug/kg		41 U	40 U	38 U
A-BHC	ug/kg		2.1 U	2.0 U	2.0 U
B-BHC	ug/kg		2.1 U	2.0 U	2.0 U
D-BHC	ug/kg		2.1 U	2.0 U	2.0 U
G-BHC	ug/kg		2.1 U	2.0 U	2.0 U
cis-Chlordane	ug/kg		2.1 U	2.0 U	2.0 U
trans-Chlordane	ug/kg		2.1 U	2.0 U	2.0 U
p,p'-DDD	ug/kg		4.1 U	4.0 U	3.8 U
p,p'-DDE	ug/kg		4.1 U	4.0 U	3.8 U
p,p'-DDT	ug/kg		4.1 U	4.0 U	3.8 U
Dieldrin	ug/kg		4.1 U	4.0 U	3.8 U
Endosulfan I	ug/kg		2.1 U	2.0 U	2.0 U
Endosulfan II	ug/kg		4.1 U	4.0 U	3.8 U
Endosulfan Sulfate	ug/kg		4.1 U	4.0 U	3.8 U
Endrin	ug/kg		4.1 U	4.0 U	3.8 U
Endrin Aldehyde	ug/kg		4.1 U	4.0 U	3.8 U
Endrin Ketone	ug/kg		4.1 U	4.0 U	3.8 U
Heptachlor	ug/kg		2.1 U	2.0 U	2.0 U
Heptachlor Epoxide	ug/kg		2.1 U	2.0 U	2.0 U
p,p'-Methoxychlor	ug/kg		21 U	20 U	20 U
Toxaphene	ug/kg		210 U	200 U	200 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg		210 U		
Acenaphthylene	ug/kg		210 U		
Acetophenone	ug/kg		210 U		
Anthracene	ug/kg		210 U		
Atrazine	ug/kg		210 U		
Benzaldehyde	ug/kg		210 U		
Benzo(a)anthracene	ug/kg		210 U		
Benzo(a)pyrene	ug/kg		210 U		
Benzo(b)fluoranthene	ug/kg		210 U		
Benzo(g,h,i)perylene	ug/kg		210 U		

Analysis/ Analyte	Units	98-__	99-__	100-__	101-__
Benzo(k)fluoranthene	ug/kg		210 U		
Biphenyl	ug/kg		210 U		
bis(2-Chloroethoxy)methane	ug/kg		210 U		
bis(2-Chloroethyl)ether	ug/kg		210 U		
bis(2-Chloroisopropyl)ether	ug/kg		210 U		
bis(2-Ethylhexyl)phthalate	ug/kg		210 U		
4-Bromophenyl-phenylether	ug/kg		210 U		
Butylbenzylphthalate	ug/kg		210 U		
Caprolactam	ug/kg		210 U		
Carbazole	ug/kg		210 U		
4-Chloro-3-methylphenol	ug/kg		210 U		
4-Chloroaniline	ug/kg		210 U		
2-Chloronaphthalene	ug/kg		210 U		
2-Chlorophenol	ug/kg		210 U		
4-Chlorophenyl-phenylether	ug/kg		210 U		
Chrysene	ug/kg		210 U		
Di-n-butylphthalate	ug/kg		210 U		
Di-n-octylphthalate	ug/kg		210 U		
Dibenz(a,h)anthracene	ug/kg		210 U		
Dibenzofuran	ug/kg		210 U		
3,3'-Dichlorobenzidine	ug/kg		210 U		
2,4-Dichlorophenol	ug/kg		210 U		
Diethylphthalate	ug/kg		210 U		
2,4-Dimethylphenol	ug/kg		210 U		
Dimethylphthalate	ug/kg		210 U		
4,6-Dinitro-2-methylphenol	ug/kg		410 U		
2,4-Dinitrophenol	ug/kg		410 U		
2,4-Dinitrotoluene	ug/kg		210 U		
2,6-Dinitrotoluene	ug/kg		210 U		
Fluoranthene	ug/kg		210 U		
Fluorene	ug/kg		210 U		
Hexachlorobenzene	ug/kg		210 U		
Hexachlorobutadiene	ug/kg		210 U		
Hexachlorocyclopentadiene	ug/kg		210 U		
Hexachloroethane	ug/kg		210 U		
Indeno(1,2,3-cd)pyrene	ug/kg		210 U		
Isophorone	ug/kg		210 U		
2-Methylnaphthalene	ug/kg		210 U		
2-Methylphenol	ug/kg		210 U		
4-Methylphenol	ug/kg		210 U		
Naphthalene	ug/kg		210 U		
2-Nitroaniline	ug/kg		410 U		
3-Nitroaniline	ug/kg		410 U		
4-Nitroaniline	ug/kg		410 U		
Nitrobenzene	ug/kg		210 U		

Analysis/ Analyte	Units	98-__	99-__	100-__	101-__
2-Nitrophenol	ug/kg		210 U		
4-Nitrophenol	ug/kg		410 U		
N-nitroso-di-n-propylamine	ug/kg		210 U		
N-nitrosodiphenylamine	ug/kg		210 U		
Pentachlorophenol	ug/kg		410 UJ		
Phenanthrene	ug/kg		210 U		
Phenol	ug/kg		210 U		
Pyrene	ug/kg		210 U		
1,2,4,5-Tetrachlorobenzene	ug/kg		210 U		
2,4,5-Trichlorophenol	ug/kg		210 U		
2,4,6-Trichlorophenol	ug/kg		210 U		
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg		79.3 U	80.2 U	76.5 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	93	11 U		
Benzene	ug/kg	4.8 U	5.4 U		
Bromochloromethane	ug/kg	4.8 U	5.4 U		
Bromodichloromethane	ug/kg	4.8 U	5.4 U		
Bromoform	ug/kg	4.8 U	5.4 U		
Bromomethane	ug/kg	4.8 U	5.4 U		
2-Butanone	ug/kg	15	11 U		
Carbon Disulfide	ug/kg	4.8 U	5.4 U		
Carbon Tetrachloride	ug/kg	4.8 U	5.4 U		
Chlorobenzene	ug/kg	4.8 U	5.4 U		
Chloroethane	ug/kg	4.8 U	5.4 U		
Chloroform	ug/kg	4.8 U	5.4 U		
Chloromethane	ug/kg	4.8 U	5.4 U		
Cyclohexane	ug/kg	4.8 U	5.4 U		
1,2-Dibromo-3-Chloropropane	ug/kg	4.8 U	5.4 U		
Dibromochloromethane	ug/kg	4.8 U	5.4 U		
1,2-Dibromoethane	ug/kg	4.8 U	5.4 U		
1,2-Dichlorobenzene	ug/kg	4.8 U	5.4 U		
1,3-Dichlorobenzene	ug/kg	4.8 U	5.4 U		
1,4-Dichlorobenzene	ug/kg	4.8 U	5.4 U		
Dichlorodifluoromethane	ug/kg	4.8 U	5.4 U		
1,1-Dichloroethane	ug/kg	4.8 U	5.4 U		
1,2-Dichloroethane	ug/kg	4.8 U	5.4 U		
1,1-Dichloroethene	ug/kg	4.8 U	5.4 U		
cis-1,2-Dichloroethene	ug/kg	4.8 U	5.4 U		
trans-1,2-Dichloroethene	ug/kg	4.8 U	5.4 U		
1,2-Dichloropropane	ug/kg	4.8 U	5.4 U		
cis-1,3-Dichloropropene	ug/kg	4.8 U	5.4 U		
trans-1,3-Dichloropropene	ug/kg	4.8 U	5.4 U		
Ethyl Benzene	ug/kg	4.8 U	5.4 U		
2-Hexanone	ug/kg	9.5 U	11 U		

Analysis/ Analyte	Units	98-__	99-__	100-__	101-__
Isopropylbenzene	ug/kg	4.8 U	5.4 U		
Methyl Acetate	ug/kg	4.8 U	5.4 U		
Methyl tert-butyl ether	ug/kg	4.8 U	5.4 U		
Methylcyclohexane	ug/kg	4.8 U	5.4 U		
Methylene Chloride	ug/kg	4.8 U	5.4 U		
4-Methyl-2-Pentanone	ug/kg	9.5 U	11 U		
Styrene	ug/kg	4.8 U	5.4 U		
1,1,2,2-Tetrachloroethane	ug/kg	4.8 U	5.4 U		
Tetrachloroethene	ug/kg	4.8 U	5.4 U		
Toluene	ug/kg	4.8 U	5.4 U		
1,2,3-Trichlorobenzene	ug/kg	4.8 U	5.4 U		
1,2,4-Trichlorobenzene	ug/kg	4.8 U	5.4 U		
1,1,1-Trichloroethane	ug/kg	4.8 U	5.4 U		
1,1,2-Trichloroethane	ug/kg	4.8 U	5.4 U		
Trichloroethene	ug/kg	4.8 U	5.4 U		
Trichlorofluoromethane	ug/kg	4.8 U	5.4 U		
1,1,2-Trichlorotrifluoroethane	ug/kg	4.8 U	5.4 U		
Vinyl Chloride	ug/kg	4.8 U	5.4 U		
m and/or p-Xylene	ug/kg	4.8 U	5.4 U		
o-Xylene	ug/kg	4.8 U	5.4 U		

Analysis/ Analyte	Units	102-__	103-__	104-__	105-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	12.1 U	11.9 U		
2,4,5-TP	ug/kg	9.9 U	9.7 U		
2,4-D	ug/kg	20.3 U	19.9 U		
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.1 U		
Aroclor 1016	ug/kg	41 U	41 U		
Aroclor 1221	ug/kg	41 U	41 U		
Aroclor 1232	ug/kg	41 U	41 U		
Aroclor 1242	ug/kg	41 U	41 U		
Aroclor 1248	ug/kg	41 U	41 U		
Aroclor 1254	ug/kg	41 U	41 U		
Aroclor 1260	ug/kg	41 U	41 U		
Aroclor 1262	ug/kg	41 U	41 U		
Aroclor 1268	ug/kg	41 U	41 U		
A-BHC	ug/kg	2.1 U	2.1 U		
B-BHC	ug/kg	2.1 U	2.1 U		
D-BHC	ug/kg	2.1 U	2.1 U		
G-BHC	ug/kg	2.1 U	2.1 U		
cis-Chlordane	ug/kg	2.1 U	2.1 U		
trans-Chlordane	ug/kg	2.1 U	2.1 U		
p,p'-DDD	ug/kg	4.1 U	4.1 U		
p,p'-DDE	ug/kg	4.1 U	4.1 U		
p,p'-DDT	ug/kg	4.1 U	4.1 U		
Dieldrin	ug/kg	4.1 U	4.1 U		
Endosulfan I	ug/kg	2.1 U	2.1 U		
Endosulfan II	ug/kg	4.1 U	4.1 U		
Endosulfan Sulfate	ug/kg	4.1 U	4.1 U		
Endrin	ug/kg	4.1 U	4.1 U		
Endrin Aldehyde	ug/kg	4.1 U	4.1 U		
Endrin Ketone	ug/kg	4.1 U	4.1 U		
Heptachlor	ug/kg	2.1 U	2.1 U		
Heptachlor Epoxide	ug/kg	2.1 U	2.1 U		
p,p'-Methoxychlor	ug/kg	21 U	21 U		
Toxaphene	ug/kg	210 U	210 U		
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	83.4 U	81.9 U		
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg			61	65
Benzene	ug/kg			5.3 U	5.3 U
Bromochloromethane	ug/kg			5.3 U	5.3 U
Bromodichloromethane	ug/kg			5.3 U	5.3 U
Bromoform	ug/kg			5.3 U	5.3 U
Bromomethane	ug/kg			5.3 U	5.3 U
2-Butanone	ug/kg			11 U	15
Carbon Disulfide	ug/kg			5.3 U	5.3 U

Analysis/ Analyte	Units	102-__	103-__	104-__	105-__
Carbon Tetrachloride	ug/kg			5.3 U	5.3 U
Chlorobenzene	ug/kg			5.3 U	5.3 U
Chloroethane	ug/kg			5.3 U	5.3 U
Chloroform	ug/kg			5.3 U	5.3 U
Chloromethane	ug/kg			5.3 U	5.3 U
Cyclohexane	ug/kg			5.3 U	5.3 U
1,2-Dibromo-3-Chloropropane	ug/kg			5.3 U	5.3 U
Dibromochloromethane	ug/kg			5.3 U	5.3 U
1,2-Dibromoethane	ug/kg			5.3 U	5.3 U
1,2-Dichlorobenzene	ug/kg			5.3 U	5.3 U
1,3-Dichlorobenzene	ug/kg			5.3 U	5.3 U
1,4-Dichlorobenzene	ug/kg			5.3 U	5.3 U
Dichlorodifluoromethane	ug/kg			5.3 U	5.3 U
1,1-Dichloroethane	ug/kg			5.3 U	5.3 U
1,2-Dichloroethane	ug/kg			5.3 U	5.3 U
1,1-Dichloroethene	ug/kg			5.3 U	5.3 U
cis-1,2-Dichloroethene	ug/kg			5.3 U	5.3 U
trans-1,2-Dichloroethene	ug/kg			5.3 U	5.3 U
1,2-Dichloropropane	ug/kg			5.3 U	5.3 U
cis-1,3-Dichloropropene	ug/kg			5.3 U	5.3 U
trans-1,3-Dichloropropene	ug/kg			5.3 U	5.3 U
Ethyl Benzene	ug/kg			5.3 U	5.3 U
2-Hexanone	ug/kg			11 U	11 U
Isopropylbenzene	ug/kg			5.3 U	5.3 U
Methyl Acetate	ug/kg			5.3 U	5.3 U
Methyl tert-butyl ether	ug/kg			5.3 U	5.3 U
Methylcyclohexane	ug/kg			5.3 U	5.3 U
Methylene Chloride	ug/kg			5.3 U	5.3 U
4-Methyl-2-Pentanone	ug/kg			11 U	11 U
Styrene	ug/kg			5.3 U	5.3 U
1,1,2,2-Tetrachloroethane	ug/kg			5.3 U	5.3 U
Tetrachloroethene	ug/kg			5.3 U	5.3 U
Toluene	ug/kg			5.3 U	5.3 U
1,2,3-Trichlorobenzene	ug/kg			5.3 U	5.3 U
1,2,4-Trichlorobenzene	ug/kg			5.3 U	5.3 U
1,1,1-Trichloroethane	ug/kg			5.3 U	5.3 U
1,1,2-Trichloroethane	ug/kg			5.3 U	5.3 U
Trichloroethene	ug/kg			5.3 U	5.3 U
Trichlorofluoromethane	ug/kg			5.3 U	5.3 U
1,1,2-Trichlorotrifluoroethane	ug/kg			5.3 U	5.3 U
Vinyl Chloride	ug/kg			5.3 U	5.3 U
m and/or p-Xylene	ug/kg			5.3 U	5.3 U
o-Xylene	ug/kg			5.3 U	5.3 U

Analysis/ Analyte	Units	106-__	107-__	108-__	109-__
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg				2.0 U
Aroclor 1016	ug/kg				39 U
Aroclor 1221	ug/kg				39 U
Aroclor 1232	ug/kg				39 U
Aroclor 1242	ug/kg				39 U
Aroclor 1248	ug/kg				39 U
Aroclor 1254	ug/kg				39 U
Aroclor 1260	ug/kg				39 U
Aroclor 1262	ug/kg				39 U
Aroclor 1268	ug/kg				39 U
A-BHC	ug/kg				2.0 U
B-BHC	ug/kg				2.0 U
D-BHC	ug/kg				2.0 U
G-BHC	ug/kg				2.0 U
cis-Chlordane	ug/kg				2.0 U
trans-Chlordane	ug/kg				2.0 U
p,p'-DDD	ug/kg				3.9 U
p,p'-DDE	ug/kg				3.9 U
p,p'-DDT	ug/kg				3.9 U
Dieldrin	ug/kg				3.9 U
Endosulfan I	ug/kg				2.0 U
Endosulfan II	ug/kg				3.9 U
Endosulfan Sulfate	ug/kg				3.9 U
Endrin	ug/kg				3.9 U
Endrin Aldehyde	ug/kg				3.9 U
Endrin Ketone	ug/kg				3.9 U
Heptachlor	ug/kg				2.0 U
Heptachlor Epoxide	ug/kg				2.0 U
p,p'-Methoxychlor	ug/kg				20 U
Toxaphene	ug/kg				200 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	83	25	14	
Benzene	ug/kg	6.0 U	6.0 U	6.1 U	
Bromochloromethane	ug/kg	6.0 U	6.0 U	6.1 U	
Bromodichloromethane	ug/kg	6.0 U	6.0 U	6.1 U	
Bromoform	ug/kg	6.0 U	6.0 U	6.1 U	
Bromomethane	ug/kg	6.0 U	6.0 U	6.1 U	
2-Butanone	ug/kg	20	12 U	12 U	
Carbon Disulfide	ug/kg	6.0 U	6.0 U	6.1 U	
Carbon Tetrachloride	ug/kg	6.0 U	6.0 U	6.1 U	
Chlorobenzene	ug/kg	6.0 U	6.0 U	6.1 U	
Chloroethane	ug/kg	6.0 U	6.0 U	6.1 U	
Chloroform	ug/kg	6.0 U	6.0 U	6.1 U	
Chloromethane	ug/kg	6.0 U	6.0 U	6.1 U	
Cyclohexane	ug/kg	6.0 U	6.0 U	6.1 U	

Analysis/ Analyte	Units	106-__	107-__	108-__	109-__
1,2-Dibromo-3-Chloropropane	ug/kg	6.0 U	6.0 U	6.1 U	
Dibromochloromethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,2-Dibromoethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,2-Dichlorobenzene	ug/kg	6.0 U	6.0 U	6.1 U	
1,3-Dichlorobenzene	ug/kg	6.0 U	6.0 U	6.1 U	
1,4-Dichlorobenzene	ug/kg	6.0 U	6.0 U	6.1 U	
Dichlorodifluoromethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,1-Dichloroethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,2-Dichloroethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,1-Dichloroethene	ug/kg	6.0 U	6.0 U	6.1 U	
cis-1,2-Dichloroethene	ug/kg	6.0 U	6.0 U	6.1 U	
trans-1,2-Dichloroethene	ug/kg	6.0 U	6.0 U	6.1 U	
1,2-Dichloropropane	ug/kg	6.0 U	6.0 U	6.1 U	
cis-1,3-Dichloropropene	ug/kg	6.0 U	6.0 U	6.1 U	
trans-1,3-Dichloropropene	ug/kg	6.0 U	6.0 U	6.1 U	
Ethyl Benzene	ug/kg	6.0 U	6.0 U	6.1 U	
2-Hexanone	ug/kg	12 U	12 U	12 U	
Isopropylbenzene	ug/kg	6.0 U	6.0 U	6.1 U	
Methyl Acetate	ug/kg	6.0 U	6.0 U	6.1 U	
Methyl tert-butyl ether	ug/kg	6.0 U	6.0 U	6.1 U	
Methylcyclohexane	ug/kg	6.0 U	6.0 U	6.1 U	
Methylene Chloride	ug/kg	6.0 U	6.0 U	6.1 U	
4-Methyl-2-Pentanone	ug/kg	12 U	12 U	12 U	
Styrene	ug/kg	6.0 U	6.0 U	6.1 U	
1,1,2,2-Tetrachloroethane	ug/kg	6.0 U	6.0 U	6.1 U	
Tetrachloroethene	ug/kg	6.0 U	6.0 U	6.1 U	
Toluene	ug/kg	6.0 U	6.0 U	6.1 U	
1,2,3-Trichlorobenzene	ug/kg	6.0 U	6.0 U	6.1 U	
1,2,4-Trichlorobenzene	ug/kg	6.0 U	6.0 U	6.1 U	
1,1,1-Trichloroethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,1,2-Trichloroethane	ug/kg	6.0 U	6.0 U	6.1 U	
Trichloroethene	ug/kg	6.0 U	6.0 U	6.1 U	
Trichlorofluoromethane	ug/kg	6.0 U	6.0 U	6.1 U	
1,1,2-Trichlorotrifluoroethane	ug/kg	6.0 U	6.0 U	6.1 U	
Vinyl Chloride	ug/kg	6.0 U	6.0 U	6.1 U	
m and/or p-Xylene	ug/kg	6.0 U	6.0 U	6.1 U	
o-Xylene	ug/kg	6.0 U	6.0 U	6.1 U	

Analysis/ Analyte	Units	109-FD	110-__	111-__	112-__
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.0 U	2.0 U	2.1 U	
Aroclor 1016	ug/kg	39 U	40 U	40 U	
Aroclor 1221	ug/kg	39 U	40 U	40 U	
Aroclor 1232	ug/kg	39 U	40 U	40 U	
Aroclor 1242	ug/kg	39 U	40 U	40 U	
Aroclor 1248	ug/kg	39 U	40 U	40 U	
Aroclor 1254	ug/kg	39 U	40 U	40 U	
Aroclor 1260	ug/kg	39 U	40 U	40 U	
Aroclor 1262	ug/kg	39 U	40 U	40 U	
Aroclor 1268	ug/kg	39 U	40 U	40 U	
A-BHC	ug/kg	2.0 U	2.0 U	2.1 U	
B-BHC	ug/kg	2.0 U	2.0 U	2.1 U	
D-BHC	ug/kg	2.0 U	2.0 U	2.1 U	
G-BHC	ug/kg	2.0 U	2.0 U	2.1 U	
cis-Chlordane	ug/kg	2.0 U	2.0 U	2.1 U	
trans-Chlordane	ug/kg	2.0 U	2.0 U	2.1 U	
p,p'-DDD	ug/kg	3.9 U	4.0 U	4.0 U	
p,p'-DDE	ug/kg	3.9 U	4.0 U	4.0 U	
p,p'-DDT	ug/kg	3.9 U	4.0 U	4.0 U	
Dieldrin	ug/kg	3.9 U	4.0 U	4.0 U	
Endosulfan I	ug/kg	2.0 U	2.0 U	2.1 U	
Endosulfan II	ug/kg	3.9 U	4.0 U	4.0 U	
Endosulfan Sulfate	ug/kg	3.9 U	4.0 U	4.0 U	
Endrin	ug/kg	3.9 U	4.0 U	4.0 U	
Endrin Aldehyde	ug/kg	3.9 U	4.0 U	4.0 U	
Endrin Ketone	ug/kg	3.9 U	4.0 U	4.0 U	
Heptachlor	ug/kg	2.0 U	2.0 U	2.1 U	
Heptachlor Epoxide	ug/kg	2.0 U	2.0 U	2.1 U	
p,p'-Methoxychlor	ug/kg	20 U	20 U	21 U	
Toxaphene	ug/kg	200 U	200 U	210 U	
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg				56
Benzene	ug/kg				6.2 U
Bromochloromethane	ug/kg				6.2 U
Bromodichloromethane	ug/kg				6.2 U
Bromoform	ug/kg				6.2 U
Bromomethane	ug/kg				6.2 U
2-Butanone	ug/kg				14
Carbon Disulfide	ug/kg				6.2 U
Carbon Tetrachloride	ug/kg				6.2 U
Chlorobenzene	ug/kg				6.2 U
Chloroethane	ug/kg				6.2 U
Chloroform	ug/kg				6.2 U
Chloromethane	ug/kg				6.2 U
Cyclohexane	ug/kg				6.2 U

Analysis/ Analyte	Units	109-FD	110-__	111-__	112-__
1,2-Dibromo-3-Chloropropane	ug/kg				6.2 U
Dibromochloromethane	ug/kg				6.2 U
1,2-Dibromoethane	ug/kg				6.2 U
1,2-Dichlorobenzene	ug/kg				6.2 U
1,3-Dichlorobenzene	ug/kg				6.2 U
1,4-Dichlorobenzene	ug/kg				6.2 U
Dichlorodifluoromethane	ug/kg				6.2 U
1,1-Dichloroethane	ug/kg				6.2 U
1,2-Dichloroethane	ug/kg				6.2 U
1,1-Dichloroethene	ug/kg				6.2 U
cis-1,2-Dichloroethene	ug/kg				6.2 U
trans-1,2-Dichloroethene	ug/kg				6.2 U
1,2-Dichloropropane	ug/kg				6.2 U
cis-1,3-Dichloropropene	ug/kg				6.2 U
trans-1,3-Dichloropropene	ug/kg				6.2 U
Ethyl Benzene	ug/kg				6.2 U
2-Hexanone	ug/kg				12 U
Isopropylbenzene	ug/kg				6.2 U
Methyl Acetate	ug/kg				6.2 U
Methyl tert-butyl ether	ug/kg				6.2 U
Methylcyclohexane	ug/kg				6.2 U
Methylene Chloride	ug/kg				6.2 U
4-Methyl-2-Pentanone	ug/kg				12 U
Styrene	ug/kg				6.2 U
1,1,2,2-Tetrachloroethane	ug/kg				6.2 U
Tetrachloroethene	ug/kg				6.2 U
Toluene	ug/kg				6.2 U
1,2,3-Trichlorobenzene	ug/kg				6.2 U
1,2,4-Trichlorobenzene	ug/kg				6.2 U
1,1,1-Trichloroethane	ug/kg				6.2 U
1,1,2-Trichloroethane	ug/kg				6.2 U
Trichloroethene	ug/kg				6.2 U
Trichlorofluoromethane	ug/kg				6.2 U
1,1,2-Trichlorotrifluoroethane	ug/kg				6.2 U
Vinyl Chloride	ug/kg				6.2 U
m and/or p-Xylene	ug/kg				6.2 U
o-Xylene	ug/kg				6.2 U

Analysis/ Analyte	Units	113-__	114-__	115-__	116-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	18	18	24	20
Benzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Bromochloromethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Bromodichloromethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Bromoform	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Bromomethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
2-Butanone	ug/kg	11 U	12 U	12 U	12 U
Carbon Disulfide	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Carbon Tetrachloride	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Chlorobenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Chloroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Chloroform	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Chloromethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Cyclohexane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Dibromochloromethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2-Dibromoethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2-Dichlorobenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,3-Dichlorobenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,4-Dichlorobenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Dichlorodifluoromethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,1-Dichloroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2-Dichloroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,1-Dichloroethene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
cis-1,2-Dichloroethene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
trans-1,2-Dichloroethene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2-Dichloropropane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
cis-1,3-Dichloropropene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
trans-1,3-Dichloropropene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Ethyl Benzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
2-Hexanone	ug/kg	11 U	12 U	12 U	12 U
Isopropylbenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Methyl Acetate	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Methyl tert-butyl ether	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Methylcyclohexane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Methylene Chloride	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
4-Methyl-2-Pentanone	ug/kg	11 U	12 U	12 U	12 U
Styrene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Tetrachloroethene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Toluene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2,3-Trichlorobenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,2,4-Trichlorobenzene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,1,1-Trichloroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,1,2-Trichloroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U

Analysis/ Analyte	Units	113-__	114-__	115-__	116-__
Trichloroethene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Trichlorofluoromethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
Vinyl Chloride	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
m and/or p-Xylene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U
o-Xylene	ug/kg	5.4 U	5.8 U	5.8 U	5.9 U

Analysis/ Analyte	Units	117-__	118-__	119-__	120-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	36	37	19	45
Benzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Bromochloromethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Bromodichloromethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Bromoform	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Bromomethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
2-Butanone	ug/kg	11 U	12 U	13 U	11
Carbon Disulfide	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Carbon Tetrachloride	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Chlorobenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Chloroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Chloroform	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Chloromethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Cyclohexane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Dibromochloromethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2-Dibromoethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2-Dichlorobenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,3-Dichlorobenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,4-Dichlorobenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Dichlorodifluoromethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,1-Dichloroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2-Dichloroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,1-Dichloroethene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
cis-1,2-Dichloroethene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
trans-1,2-Dichloroethene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2-Dichloropropane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
cis-1,3-Dichloropropene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
trans-1,3-Dichloropropene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Ethyl Benzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
2-Hexanone	ug/kg	11 U	12 U	13 U	11 U
Isopropylbenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Methyl Acetate	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Methyl tert-butyl ether	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Methylcyclohexane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Methylene Chloride	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
4-Methyl-2-Pentanone	ug/kg	11 U	12 U	13 U	11 U
Styrene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,1,2,2-Tetrachloroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Tetrachloroethene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Toluene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2,3-Trichlorobenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,2,4-Trichlorobenzene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,1,1-Trichloroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,1,2-Trichloroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U

Analysis/ Analyte	Units	117-__	118-__	119-__	120-__
Trichloroethene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Trichlorofluoromethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
Vinyl Chloride	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
m and/or p-Xylene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U
o-Xylene	ug/kg	5.4 U	6.0 U	6.4 U	5.4 U

Analysis/ Analyte	Units	121-__	122-__	123-__	124-__
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
Aroclor 1016	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1221	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1232	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1242	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1248	ug/kg	200	43 U	40 U	42 U
Aroclor 1254	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1260	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1262	ug/kg	40 U	43 U	40 U	42 U
Aroclor 1268	ug/kg	40 U	43 U	40 U	42 U
A-BHC	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
B-BHC	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
D-BHC	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
G-BHC	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
cis-Chlordane	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
trans-Chlordane	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
p,p'-DDD	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
p,p'-DDE	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
p,p'-DDT	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Dieldrin	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Endosulfan I	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
Endosulfan II	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Endosulfan Sulfate	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Endrin	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Endrin Aldehyde	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Endrin Ketone	ug/kg	4.0 U	4.3 U	4.0 U	4.2 U
Heptachlor	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
Heptachlor Epoxide	ug/kg	2.1 U	2.2 U	2.1 U	2.2 U
p,p'-Methoxychlor	ug/kg	21 U	22 U	21 U	22 U
Toxaphene	ug/kg	210 U	220 U	210 U	220 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg		23	58	49
Benzene	ug/kg		6.4 U	5.8 U	5.9 U
Bromochloromethane	ug/kg		6.4 U	5.8 U	5.9 U
Bromodichloromethane	ug/kg		6.4 U	5.8 U	5.9 U
Bromoform	ug/kg		6.4 U	5.8 U	5.9 U
Bromomethane	ug/kg		6.4 U	5.8 U	5.9 U
2-Butanone	ug/kg		13 U	12	12 U
Carbon Disulfide	ug/kg		6.4 U	5.8 U	5.9 U
Carbon Tetrachloride	ug/kg		6.4 U	5.8 U	5.9 U
Chlorobenzene	ug/kg		6.4 U	5.8 U	5.9 U
Chloroethane	ug/kg		6.4 U	5.8 U	5.9 U
Chloroform	ug/kg		6.4 U	5.8 U	5.9 U
Chloromethane	ug/kg		6.4 U	5.8 U	5.9 U
Cyclohexane	ug/kg		6.4 U	5.8 U	5.9 U

Analysis/ Analyte	Units	121-__	122-__	123-__	124-__
1,2-Dibromo-3-Chloropropane	ug/kg		6.4 U	5.8 U	5.9 U
Dibromochloromethane	ug/kg		6.4 U	5.8 U	5.9 U
1,2-Dibromoethane	ug/kg		6.4 U	5.8 U	5.9 U
1,2-Dichlorobenzene	ug/kg		6.4 U	5.8 U	5.9 U
1,3-Dichlorobenzene	ug/kg		6.4 U	5.8 U	5.9 U
1,4-Dichlorobenzene	ug/kg		6.4 U	5.8 U	5.9 U
Dichlorodifluoromethane	ug/kg		6.4 U	5.8 U	5.9 U
1,1-Dichloroethane	ug/kg		6.4 U	5.8 U	5.9 U
1,2-Dichloroethane	ug/kg		6.4 U	5.8 U	5.9 U
1,1-Dichloroethene	ug/kg		6.4 U	5.8 U	5.9 U
cis-1,2-Dichloroethene	ug/kg		6.4 U	5.8 U	5.9 U
trans-1,2-Dichloroethene	ug/kg		6.4 U	5.8 U	5.9 U
1,2-Dichloropropane	ug/kg		6.4 U	5.8 U	5.9 U
cis-1,3-Dichloropropene	ug/kg		6.4 U	5.8 U	5.9 U
trans-1,3-Dichloropropene	ug/kg		6.4 U	5.8 U	5.9 U
Ethyl Benzene	ug/kg		6.4 U	5.8 U	5.9 U
2-Hexanone	ug/kg		13 U	12 U	12 U
Isopropylbenzene	ug/kg		6.4 U	5.8 U	5.9 U
Methyl Acetate	ug/kg		6.4 U	5.8 U	5.9 U
Methyl tert-butyl ether	ug/kg		6.4 U	5.8 U	5.9 U
Methylcyclohexane	ug/kg		6.4 U	5.8 U	5.9 U
Methylene Chloride	ug/kg		6.4 U	5.8 U	5.9 U
4-Methyl-2-Pentanone	ug/kg		13 U	12 U	12 U
Styrene	ug/kg		6.4 U	5.8 U	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg		6.4 U	5.8 U	5.9 U
Tetrachloroethene	ug/kg		6.4 U	5.8 U	5.9 U
Toluene	ug/kg		6.4 U	5.8 U	5.9 U
1,2,3-Trichlorobenzene	ug/kg		6.4 U	5.8 U	5.9 U
1,2,4-Trichlorobenzene	ug/kg		6.4 U	5.8 U	5.9 U
1,1,1-Trichloroethane	ug/kg		6.4 U	5.8 U	5.9 U
1,1,2-Trichloroethane	ug/kg		6.4 U	5.8 U	5.9 U
Trichloroethene	ug/kg		6.4 U	5.8 U	5.9 U
Trichlorofluoromethane	ug/kg		6.4 U	5.8 U	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg		6.4 U	5.8 U	5.9 U
Vinyl Chloride	ug/kg		6.4 U	5.8 U	5.9 U
m and/or p-Xylene	ug/kg		6.4 U	5.8 U	5.9 U
o-Xylene	ug/kg		6.4 U	5.8 U	5.9 U

Analysis/ Analyte	Units	125-__	126-__	126-FD	128-__
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
Aroclor 1016	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1221	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1232	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1242	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1248	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1254	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1260	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1262	ug/kg	36 U	40 U	41 U	42 U
Aroclor 1268	ug/kg	36 U	40 U	41 U	42 U
A-BHC	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
B-BHC	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
D-BHC	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
G-BHC	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
cis-Chlordane	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
trans-Chlordane	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
p,p'-DDD	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
p,p'-DDE	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
p,p'-DDT	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Dieldrin	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Endosulfan I	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
Endosulfan II	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Endosulfan Sulfate	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Endrin	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Endrin Aldehyde	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Endrin Ketone	ug/kg	3.6 U	4.0 U	4.1 U	4.2 U
Heptachlor	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
Heptachlor Epoxide	ug/kg	1.8 U	2.1 U	2.1 U	2.2 U
p,p'-Methoxychlor	ug/kg	18 U	21 U	21 U	22 U
Toxaphene	ug/kg	180 U	210 U	210 U	220 U

Analysis/ Analyte	Units	129-__	130-__	131-__	132-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	130	69	31	44
Benzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Bromochloromethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Bromodichloromethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Bromoform	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Bromomethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
2-Butanone	ug/kg	27	15 U	14 U	12 U
Carbon Disulfide	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Carbon Tetrachloride	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Chlorobenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Chloroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Chloroform	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Chloromethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Cyclohexane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2-Dibromo-3-Chloropropane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Dibromochloromethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2-Dibromoethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2-Dichlorobenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,3-Dichlorobenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,4-Dichlorobenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Dichlorodifluoromethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,1-Dichloroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2-Dichloroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,1-Dichloroethene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
cis-1,2-Dichloroethene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
trans-1,2-Dichloroethene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2-Dichloropropane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
cis-1,3-Dichloropropene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
trans-1,3-Dichloropropene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Ethyl Benzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
2-Hexanone	ug/kg	15 U	15 U	14 U	12 U
Isopropylbenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Methyl Acetate	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Methyl tert-butyl ether	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Methylcyclohexane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Methylene Chloride	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
4-Methyl-2-Pentanone	ug/kg	15 U	15 U	14 U	12 U
Styrene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,1,2,2-Tetrachloroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Tetrachloroethene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Toluene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2,3-Trichlorobenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,2,4-Trichlorobenzene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,1,1-Trichloroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,1,2-Trichloroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U

Analysis/ Analyte	Units	129-__	130-__	131-__	132-__
Trichloroethene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Trichlorofluoromethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
1,1,2-Trichlorotrifluoroethane	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
Vinyl Chloride	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
m and/or p-Xylene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U
o-Xylene	ug/kg	7.6 U	7.3 U	6.9 U	6.1 U

Analysis/ Analyte	Units	133-__	134-__	135-__	136-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	90	47	81	61
Benzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Bromochloromethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Bromodichloromethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Bromoform	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Bromomethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
2-Butanone	ug/kg	19	12 U	15	13 U
Carbon Disulfide	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Carbon Tetrachloride	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Chlorobenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Chloroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Chloroform	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Chloromethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Cyclohexane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Dibromochloromethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2-Dibromoethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2-Dichlorobenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,3-Dichlorobenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,4-Dichlorobenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Dichlorodifluoromethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,1-Dichloroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2-Dichloroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,1-Dichloroethene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
cis-1,2-Dichloroethene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
trans-1,2-Dichloroethene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2-Dichloropropane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
cis-1,3-Dichloropropene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
trans-1,3-Dichloropropene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Ethyl Benzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
2-Hexanone	ug/kg	12 U	12 U	12 U	13 U
Isopropylbenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Methyl Acetate	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Methyl tert-butyl ether	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Methylcyclohexane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Methylene Chloride	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
4-Methyl-2-Pentanone	ug/kg	12 U	12 U	12 U	13 U
Styrene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,1,2,2-Tetrachloroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Tetrachloroethene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Toluene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2,3-Trichlorobenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,2,4-Trichlorobenzene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,1,1-Trichloroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,1,2-Trichloroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U

Analysis/ Analyte	Units	133-__	134-__	135-__	136-__
Trichloroethene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Trichlorofluoromethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
Vinyl Chloride	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
m and/or p-Xylene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U
o-Xylene	ug/kg	5.9 U	6.2 U	5.9 U	6.4 U

Analysis/ Analyte	Units	137-__	138-__	139-__	140-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	50	78	84	110
Benzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Bromochloromethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Bromodichloromethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Bromoform	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Bromomethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
2-Butanone	ug/kg	12 U	10	15	27
Carbon Disulfide	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Carbon Tetrachloride	ug/kg	5.9 U	4.8 U	14	6.6 U
Chlorobenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Chloroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Chloroform	ug/kg	5.9 U	7.5	5.7 U	6.6 U
Chloromethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Cyclohexane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Dibromochloromethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2-Dibromoethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2-Dichlorobenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,3-Dichlorobenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,4-Dichlorobenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Dichlorodifluoromethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,1-Dichloroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2-Dichloroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,1-Dichloroethene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
cis-1,2-Dichloroethene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
trans-1,2-Dichloroethene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2-Dichloropropane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
cis-1,3-Dichloropropene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
trans-1,3-Dichloropropene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Ethyl Benzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
2-Hexanone	ug/kg	12 U	9.7 U	11 U	13 U
Isopropylbenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Methyl Acetate	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Methyl tert-butyl ether	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Methylcyclohexane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Methylene Chloride	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
4-Methyl-2-Pentanone	ug/kg	12 U	9.7 U	11 U	13 U
Styrene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,1,2,2-Tetrachloroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Tetrachloroethene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Toluene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2,3-Trichlorobenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,2,4-Trichlorobenzene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,1,1-Trichloroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,1,2-Trichloroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U

Analysis/ Analyte	Units	137-__	138-__	139-__	140-__
Trichloroethene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Trichlorofluoromethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
Vinyl Chloride	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
m and/or p-Xylene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U
o-Xylene	ug/kg	5.9 U	4.8 U	5.7 U	6.6 U

Analysis/ Analyte	Units	141-__	142-__	143-__	144-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	88	85	44	39
Benzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Bromochloromethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Bromodichloromethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Bromoform	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Bromomethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
2-Butanone	ug/kg	19	24	10 U	9.7 U
Carbon Disulfide	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Carbon Tetrachloride	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Chlorobenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Chloroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Chloroform	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Chloromethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Cyclohexane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2-Dibromo-3-Chloropropane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Dibromochloromethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2-Dibromoethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2-Dichlorobenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,3-Dichlorobenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,4-Dichlorobenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Dichlorodifluoromethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,1-Dichloroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2-Dichloroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,1-Dichloroethene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
cis-1,2-Dichloroethene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
trans-1,2-Dichloroethene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2-Dichloropropane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
cis-1,3-Dichloropropene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
trans-1,3-Dichloropropene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Ethyl Benzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
2-Hexanone	ug/kg	9.7 U	12 U	10 U	9.7 U
Isopropylbenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Methyl Acetate	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Methyl tert-butyl ether	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Methylcyclohexane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Methylene Chloride	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
4-Methyl-2-Pentanone	ug/kg	9.7 U	12 U	10 U	9.7 U
Styrene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,1,2,2-Tetrachloroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Tetrachloroethene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Toluene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2,3-Trichlorobenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,2,4-Trichlorobenzene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,1,1-Trichloroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,1,2-Trichloroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U

Analysis/ Analyte	Units	141-__	142-__	143-__	144-__
Trichloroethene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Trichlorofluoromethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
1,1,2-Trichlorotrifluoroethane	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
Vinyl Chloride	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
m and/or p-Xylene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U
o-Xylene	ug/kg	4.8 U	6.2 U	5.1 U	4.8 U

Analysis/ Analyte	Units	145-__	146-__	147-__	148-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	22	23	32	15
Benzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Bromochloromethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Bromodichloromethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Bromoform	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Bromomethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
2-Butanone	ug/kg	9.5 U	9.6 U	8.6 U	10 U
Carbon Disulfide	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Carbon Tetrachloride	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Chlorobenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Chloroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Chloroform	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Chloromethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Cyclohexane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2-Dibromo-3-Chloropropane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Dibromochloromethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2-Dibromoethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2-Dichlorobenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,3-Dichlorobenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,4-Dichlorobenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Dichlorodifluoromethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,1-Dichloroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2-Dichloroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,1-Dichloroethene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
cis-1,2-Dichloroethene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
trans-1,2-Dichloroethene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2-Dichloropropane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
cis-1,3-Dichloropropene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
trans-1,3-Dichloropropene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Ethyl Benzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
2-Hexanone	ug/kg	9.5 U	9.6 U	8.6 U	10 U
Isopropylbenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Methyl Acetate	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Methyl tert-butyl ether	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Methylcyclohexane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Methylene Chloride	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
4-Methyl-2-Pentanone	ug/kg	9.5 U	9.6 U	8.6 U	10 U
Styrene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Tetrachloroethene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Toluene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2,3-Trichlorobenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,2,4-Trichlorobenzene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,1,1-Trichloroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,1,2-Trichloroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U

Analysis/ Analyte	Units	145-__	146-__	147-__	148-__
Trichloroethene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Trichlorofluoromethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
1,1,2-Trichlorotrifluoroethane	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
Vinyl Chloride	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
m and/or p-Xylene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U
o-Xylene	ug/kg	4.8 U	4.8 U	4.3 U	5.0 U

Analysis/ Analyte	Units	149-__	150-__	151-__	152-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	21	44	43	56
Benzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Bromochloromethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Bromodichloromethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Bromoform	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Bromomethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
2-Butanone	ug/kg	11 U	11 U	13 U	13
Carbon Disulfide	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Carbon Tetrachloride	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Chlorobenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Chloroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Chloroform	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Chloromethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Cyclohexane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Dibromochloromethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2-Dibromoethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2-Dichlorobenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,3-Dichlorobenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,4-Dichlorobenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Dichlorodifluoromethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,1-Dichloroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2-Dichloroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,1-Dichloroethene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
cis-1,2-Dichloroethene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
trans-1,2-Dichloroethene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2-Dichloropropane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
cis-1,3-Dichloropropene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
trans-1,3-Dichloropropene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Ethyl Benzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
2-Hexanone	ug/kg	11 U	11 U	13 U	11 U
Isopropylbenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Methyl Acetate	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Methyl tert-butyl ether	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Methylcyclohexane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Methylene Chloride	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
4-Methyl-2-Pentanone	ug/kg	11 U	11 U	13 U	11 U
Styrene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,1,2,2-Tetrachloroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Tetrachloroethene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Toluene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2,3-Trichlorobenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,2,4-Trichlorobenzene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,1,1-Trichloroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,1,2-Trichloroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U

Analysis/ Analyte	Units	149-__	150-__	151-__	152-__
Trichloroethene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Trichlorofluoromethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
Vinyl Chloride	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
m and/or p-Xylene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U
o-Xylene	ug/kg	5.6 U	5.3 U	6.3 U	5.6 U

Analysis/ Analyte	Units	153-__
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap		
Acetone	ug/kg	35
Benzene	ug/kg	5.9 U
Bromochloromethane	ug/kg	5.9 U
Bromodichloromethane	ug/kg	5.9 U
Bromoform	ug/kg	5.9 U
Bromomethane	ug/kg	5.9 U
2-Butanone	ug/kg	12 U
Carbon Disulfide	ug/kg	5.9 U
Carbon Tetrachloride	ug/kg	5.9 U
Chlorobenzene	ug/kg	5.9 U
Chloroethane	ug/kg	5.9 U
Chloroform	ug/kg	5.9 U
Chloromethane	ug/kg	5.9 U
Cyclohexane	ug/kg	5.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.9 U
Dibromochloromethane	ug/kg	5.9 U
1,2-Dibromoethane	ug/kg	5.9 U
1,2-Dichlorobenzene	ug/kg	5.9 U
1,3-Dichlorobenzene	ug/kg	5.9 U
1,4-Dichlorobenzene	ug/kg	5.9 U
Dichlorodifluoromethane	ug/kg	5.9 U
1,1-Dichloroethane	ug/kg	5.9 U
1,2-Dichloroethane	ug/kg	5.9 U
1,1-Dichloroethene	ug/kg	5.9 U
cis-1,2-Dichloroethene	ug/kg	5.9 U
trans-1,2-Dichloroethene	ug/kg	5.9 U
1,2-Dichloropropane	ug/kg	5.9 U
cis-1,3-Dichloropropene	ug/kg	5.9 U
trans-1,3-Dichloropropene	ug/kg	5.9 U
Ethyl Benzene	ug/kg	5.9 U
2-Hexanone	ug/kg	12 U
Isopropylbenzene	ug/kg	5.9 U
Methyl Acetate	ug/kg	5.9 U
Methyl tert-butyl ether	ug/kg	5.9 U
Methylcyclohexane	ug/kg	5.9 U
Methylene Chloride	ug/kg	5.9 U
4-Methyl-2-Pentanone	ug/kg	12 U
Styrene	ug/kg	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg	5.9 U
Tetrachloroethene	ug/kg	5.9 U
Toluene	ug/kg	5.9 U
1,2,3-Trichlorobenzene	ug/kg	5.9 U
1,2,4-Trichlorobenzene	ug/kg	5.9 U
1,1,1-Trichloroethane	ug/kg	5.9 U
1,1,2-Trichloroethane	ug/kg	5.9 U

Analysis/ Analyte	Units	153-__
Trichloroethene	ug/kg	5.9 U
Trichlorofluoromethane	ug/kg	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.9 U
Vinyl Chloride	ug/kg	5.9 U
m and/or p-Xylene	ug/kg	5.9 U
o-Xylene	ug/kg	5.9 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4518

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until ______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 09/04/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4519

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen   Org: SUPR/IANE   Phone: 913-551-7101

Project ID: BZA72Z01

Project Desc: Garvey Elevator - RI/FS sampling

Location: Hastings   State: Nebraska   Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER   Site ID: A72Z   Site OU: 01

GPRA PRC: 302DD2C

Purpose: Site Characterization

This ASR is for OU01 DPT GW sampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FD = Field Duplicate

Units: Specific units in which results are reported.

Deg C = Degrees Celsius
NTU = Nephelometric Turbidity Units
SU = Standard Units (pH)
mg/L = Milligrams per Liter
ug/L = Micrograms per Liter
umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
U = The analyte was not detected at or above the reporting limit.

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	Rinsate sample		08/06/2009	17:30			08/07/2009
2 -	__	Water	SB-29 (124-128' bgs)		08/11/2009	13:00	08/11/2009	13:50	08/12/2009
2 -	FD	Water	SB-29 (124-128' bgs)/Field Duplicate of sample 2		08/11/2009	13:50	08/11/2009	14:20	08/12/2009
4 -	__	Water	SB-29 (119-123' bgs)		08/11/2009	14:35	08/11/2009	15:05	08/12/2009

Analysis Comments About Results For This Analysis

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 2-FD 4-__

Comments:
(N/A)

1 Herbicides in Water by GC/EC

Lab: REAP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3240.6C (see comments)

Samples: 1-__ 2-__ 2-FD 4-__

Comments:

1 Pesticides in Water by GC/EC

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 1-__ 2-__ 2-FD 4-__

Comments:
The detection limits for sample -4 were raised by a factor of 1.43 due to a extraction volume of 700 mL rather than the nominal volume of 1000 mL.

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 2-FD 4-__

Comments:
(N/A)

1 Semi-Volatile Organic Compounds in Water

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 1-__ 2-__ 2-FD 4-__

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Analysis	Comments About Results For This Analysis

Method: Measurement of field parameter

Samples: 2-__ 2-FD 4-__

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 2-FD 4-__

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 2-FD 4-__

Comments:
(N/A)

1 UAA Pesticides in Water by GC/EC

Lab: REAP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3240.2G (see comments)

Samples: 1-__ 2-__ 2-FD 4-__

Comments:

Analysis/ Analyte	Units	1-__	2-__	2-FD	4-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		456	456	325
1 Herbicides in Water by GC/EC					
2,4,5-T	ug/L	0.78 U	0.78 U	0.78 U	0.78 U
2,4,5-TP	ug/L	0.59 U	0.59 U	0.59 U	0.59 U
2,4-D	ug/L	0.87 U	0.87 U	0.87 U	0.87 U
1 Pesticides in Water by GC/EC					
Aldrin	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
A-BHC	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
B-BHC	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
D-BHC	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
G-BHC	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
cis-Chlordane	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
trans-Chlordane	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
p,p'-DDD	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
p,p'-DDE	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
p,p'-DDT	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Dieldrin	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Endosulfan I	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
Endosulfan II	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Endosulfan Sulfate	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Endrin	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Endrin Aldehyde	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Endrin Ketone	ug/L	0.10 U	0.10 U	0.10 U	0.14 U
Heptachlor	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
Heptachlor Epoxide	ug/L	0.050 U	0.050 U	0.050 U	0.071 U
p,p'-Methoxychlor	ug/L	0.50 U	0.50 U	0.50 U	0.71 U
Toxaphene	ug/L	5.0 U	5.0 U	5.0 U	7.1 U
1 pH of Water by Field Measurement					
pH	SU		6.74	6.74	7.05
1 Semi-Volatile Organic Compounds in Water					
Acenaphthene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Acenaphthylene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Acetophenone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Anthracene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Atrazine	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzaldehyde	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(a)anthracene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(a)pyrene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(b)fluoranthene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(g,h,i)perylene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(k)fluoranthene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Biphenyl	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
bis(2-Chloroethoxy)methane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
bis(2-Chloroethyl)ether	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
bis(2-Chloroisopropyl)ether	ug/L	5.0 U	5.0 U	5.0 U	5.0 U

Analysis/ Analyte	Units	1-__	2-__	2-FD	4-__
bis(2-Ethylhexyl)phthalate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Bromophenyl-phenylether	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Butylbenzylphthalate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Caprolactam	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbazole	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Chloro-3-methylphenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Chloroaniline	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Chloronaphthalene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Chlorophenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Chlorophenyl-phenylether	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Chrysene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Di-n-butylphthalate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Di-n-octylphthalate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibenz(a,h)anthracene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibenzofuran	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
3,3'-Dichlorobenzidine	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dichlorophenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Diethylphthalate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dimethylphenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dimethylphthalate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4,6-Dinitro-2-methylphenol	ug/L	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	ug/L	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2,6-Dinitrotoluene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Fluoranthene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Fluorene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Hexachlorobenzene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Hexachlorobutadiene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Hexachlorocyclopentadiene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Hexachloroethane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isophorone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Methylnaphthalene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Methylphenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Methylphenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Nitroaniline	ug/L	10 U	10 U	10 U	10 U
3-Nitroaniline	ug/L	10 U	10 U	10 U	10 U
4-Nitroaniline	ug/L	10 U	10 U	10 U	10 U
Nitrobenzene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Nitrophenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Nitrophenol	ug/L	10 U	10 U	10 U	10 U
N-nitroso-di-n-propylamine	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
N-nitrosodiphenylamine	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Pentachlorophenol	ug/L	10 U	10 U	10 U	10 U

Analysis/ Analyte	Units	1-__	2-__	2-FD	4-__
Phenanthrene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Pyrene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4,5-Tetrachlorobenzene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2,3,4,6-Tetrachlorophenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2,4,5-Trichlorophenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
2,4,6-Trichlorophenol	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
1 Temperature of Water by Field Measurement					
Temperature	Deg C		19.56	19.56	20.70
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L		5.03	5.03	5.05
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		>1000	>1000	>1000
1 UAA Pesticides in Water by GC/EC					
Malathion	ug/L	0.9 U	0.9 U	0.9 U	0.9 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4519

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ____________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 09/02/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4520

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager:	Brian Zurbuchen	Org:	SUPR/IANE	Phone:	913-551-7101
Project ID:	BZA72Z01				
Project Desc:	Garvey Elevator - RI/FS sampling				
Location:	Hastings	State:	Nebraska	Program:	Superfund
Site Name:	GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER			Site ID:	A72Z Site OU: 01
				GPRA PRC:	302DD2C
Purpose:	Site Characterization				

This ASR is OU01 DPT GW sampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

Deg C = Degrees Celsius
NTU = Nephelometric Turbidity Units
SU = Standard Units (pH)
mg/L = Milligrams per Liter
ug/L = Micrograms per Liter
umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	Rinsate sample		08/06/2009	17:30			08/07/2009
2 -	__	Water	SB-32 (144-148' bgs)		08/07/2009	15:55			08/11/2009
3 -	__	Water	SB-32 (137-141' bgs)		08/07/2009	16:40			08/11/2009
4 -	__	Water	SB-32 (130-134' bgs)		08/07/2009	17:10			08/11/2009
5 -	__	Water	SB-32 (123-127' bgs)		08/07/2009	17:43			08/11/2009
6 -	__	Water	SB-13 (125-129' bgs)		08/10/2009	09:40			08/11/2009
6 -	FD	Water	SB-13 (125-129' bgs)/Field Duplicate of sample 6		08/10/2009	09:41			08/11/2009
8 -	__	Water	SB-13 (120-124' bgs)		08/10/2009	10:00			08/11/2009
9 -	__	Water	SB-12 (126-130' bgs)		08/10/2009	14:50			08/11/2009
10 -	__	Water	SB-12 (121-125' bgs)		08/10/2009	15:50			08/11/2009
11 -	__	Water	SB-29 (124-128' bgs)		08/11/2009	13:00			08/12/2009
12 -	__	Water	SB-29 (119-123' bgs)		08/11/2009	14:35			08/12/2009
13 -	__	Water	SB-09 (126-130' bgs)		08/12/2009	08:50			08/13/2009
14 -	__	Water	SB-09 (121-125' bgs)		08/12/2009	09:15			08/13/2009
14 -	FD	Water	SB-09 (121-125' bgs)/Field Duplicate of sample 14		08/12/2009	09:17			08/13/2009
37 -	FB	Water	EDB & LDL VOA Trip Blank sample 1		08/07/2009	16:00			08/11/2009
38 -	FB	Water	EDB & LDL VOA Trip Blank sample 2		08/11/2009	08:50			08/12/2009

Analysis	Comments About Results For This Analysis

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
2-__	4-__	5-__	6-__	6-FD	8-__	9-__
10-__	11-__	12-__	13-__	14-__	14-FD	

Comments:
(N/A)

1 EDB and DBCP in Drinking Water by GC/ECD

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3240.4E

Samples:						
1-__	2-__	3-__	4-__	5-__	6-__	6-FD
8-__	9-__	10-__	11-__	12-__	13-__	14-__
14-FD	37-FB	38-FB				

Comments:
Matrix Spike/Matrix Spike Duplicate (MS/MSD):
Recoveries for EDB was low in sample 2MS (EDB=47% vs. 77%-128%) and sample 2MSD (EDB=48% vs. 77%-128%). EDB was UJ-coded in sample 4520-2. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of this analyte in the MS/MSD. The actual reporting limit for this analyte may be higher than the reported value.

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
2-__	4-__	5-__	6-__	6-FD	8-__	9-__
10-__	11-__	12-__	13-__	14-__	14-FD	

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
2-__	4-__	5-__	6-__	6-FD	8-__	9-__
10-__	11-__	12-__	13-__	14-__	14-FD	

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Analysis	Comments About Results For This Analysis

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 4-__ 5-__ 6-__ 6-FD 8-__ 9-__
10-__ 11-__ 12-__ 13-__ 14-__ 14-FD

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 4-__ 5-__ 6-__ 6-FD 8-__ 9-__
10-__ 11-__ 12-__ 13-__ 14-__ 14-FD

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.13D

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
14-FD 37-FB 38-FB

Comments:
090813ESAT: Acetone (-82.2%) and 2-Butanone (-53.4%) were biased high. Acetone and 2-Butanone were J-coded in sample 11. Acetone was J-coded in samples 6 and 13. Although the analytes in question have been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentration for these analytes may be lower than the reported value.

979-LCS: Acetone (182%, 44-168%) and 2-Butanone (153%, 58-151%) were biased high. Acetone and 2-Butanone were J-coded in sample 11. Acetone was J-coded in samples 6 and 13. Although the analytes in question have been positively identified in the samples, the quantitation is an estimate (J-coded) due to high recovery of these analytes in the laboratory control sample. The actual concentration for these analytes may be lower than the reported value.

2-Butanone (163% &157%, 27-136%) was biased high. 2-Butanone was J-coded in sample 2. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of this analyte in the laboratory matrix spike. The actual concentration for this analyte may be lower than the reported value.

Acetone (118 RPD, 25 PCL) was biased high. Acetone was J-coded in sample 2. Although

Analysis	Comments About Results For This Analysis
	the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		0.534		0.44
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 UJ	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU		6.78		7.05
1 Temperature of Water by Field Measurement					
Temperature	Deg C		21.54		24.9
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L		4.0		0.30
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		>1000		>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.8	21 J	7.8	31
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	8.6 J	5.0 U	5.3
Carbon Disulfide	ug/L	1.0 U	1.2	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.467	1.063	1.063	0.888
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.92	6.57	6.57	6.59
1 Temperature of Water by Field Measurement					
Temperature	Deg C	28.00	19.94	19.94	18.32
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.59	3.47	3.47	1.61
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	10	5.7 J	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.926	0.875	0.456	0.325
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.81	6.75	6.74	7.05
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.98	19.90	19.56	20.70
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	3.77	3.40	5.03	5.05
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	55 J	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	9.0 J	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	10	1.0 U	30	72
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	2.0	1.0 U	18	9.9
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	13-__	14-__	14-FD	37-FB
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1.250	0.815	0.815	
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.08	7.18	7.18	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	21.17	18.5	18.5	
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.68	5.12	5.12	
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	18 J	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	13-__	14-__	14-FD	37-FB
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	38-FB
1 EDB and DBCP in Drinking Water by GC/ECD		
1,2-Dibromoethane	ug/L	0.020 U
1 VOCs in Water by GC/MS for Low Detection Limits		
Acetone	ug/L	5.0 U
Benzene	ug/L	1.0 U
Bromodichloromethane	ug/L	1.0 U
Bromoform	ug/L	1.0 U
Bromomethane	ug/L	1.0 U
2-Butanone	ug/L	5.0 U
Carbon Disulfide	ug/L	1.0 U
Carbon Tetrachloride	ug/L	1.0 U
Chlorobenzene	ug/L	1.0 U
Chloroethane	ug/L	1.0 U
Chloroform	ug/L	1.0 U
Chloromethane	ug/L	1.0 U
Cyclohexane	ug/L	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U
Dibromochloromethane	ug/L	1.0 U
1,2-Dibromoethane	ug/L	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U
1,1-Dichloroethane	ug/L	1.0 U
1,2-Dichloroethane	ug/L	1.0 U
1,1-Dichloroethene	ug/L	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U
1,2-Dichloropropane	ug/L	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U
Ethyl Benzene	ug/L	1.0 U
2-Hexanone	ug/L	5.0 U
Isopropylbenzene	ug/L	1.0 U
Methyl Acetate	ug/L	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U
Methylcyclohexane	ug/L	1.0 U
Methylene Chloride	ug/L	1.0 U
4-Methyl-2-Pentanone	ug/L	5.0 U
Naphthalene	ug/L	2.0 U
Styrene	ug/L	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U
Tetrachloroethene	ug/L	1.0 U
Toluene	ug/L	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U

Analysis/ Analyte	Units	38-FB
1,1,1-Trichloroethane	ug/L	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U
Trichloroethene	ug/L	1.0 U
Trichlorofluoromethane	ug/L	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U
Vinyl Chloride	ug/L	1.0 U
m and/or p-Xylene	ug/L	2.0 U
o-Xylene	ug/L	1.0 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4520

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ____________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 09/11/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4521

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101

Project ID: BZA72Z01

Project Desc: Garvey Elevator - RI/FS sampling

Location: Hastings State: Nebraska Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

GPRA PRC: 302DD2C

Purpose: Site Characterization

This ASR is for OU01 subslab soil gas/air sampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FD = Field Duplicate

Units: Specific units in which results are reported.

ug/m3 = Micrograms per Cubic Meter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Air	SG-1		08/24/2009	08:16	08/24/2009	16:16	08/25/2009
2 -	__	Air	SG-3		08/24/2009	08:17	08/24/2009	16:17	08/25/2009
3 -	__	Air	SG-5		08/24/2009	08:18	08/24/2009	16:18	08/25/2009
4 -	__	Air	SG-6		08/24/2009	08:19	08/24/2009	16:19	08/25/2009
5 -	__	Air	SG-7		08/24/2009	08:20	08/24/2009	16:20	08/25/2009
6 -	__	Air	SG-9		08/24/2009	08:25	08/24/2009	16:25	08/25/2009
7 -	__	Air	SG-10		08/24/2009	08:24	08/24/2009	16:24	08/25/2009
8 -	__	Air	SG-8		08/24/2009	08:27	08/24/2009	16:27	08/25/2009
9 -	__	Air	SG-4		08/24/2009	08:19	08/24/2009	16:19	08/25/2009
10 -	__	Air	SG-2		08/24/2009	08:15	08/24/2009	16:15	08/25/2009
11 -	__	Air	IA-7 (Quonset shop - SE corner)		08/24/2009	08:00	08/24/2009	16:06	08/25/2009
12 -	__	Air	IA-8 (Quonset shop - North wall center)		08/24/2009	08:03	08/24/2009	16:12	08/25/2009
13 -	__	Air	IA-9 (Quonset shop - SW corner)		08/24/2009	08:01	08/24/2009	16:10	08/25/2009
14 -	__	Air	IA-10 (Quonset shop - NW corner)		08/24/2009	08:02	08/24/2009	16:11	08/25/2009
15 -	__	Air	IA-3 (Office area West wall)		08/24/2009	07:59	08/24/2009	16:01	08/25/2009
15 -	FD	Air	IA-3/Field Duplicate of sample 15		08/24/2009	07:59	08/24/2009	16:01	08/25/2009
16 -	__	Air	IA-2 (South room on coffee maker table)		08/24/2009	07:59	08/24/2009	16:01	08/25/2009
17 -	__	Air	IA-1 (Ofc break area table - NE corner)		08/24/2009	08:25	08/24/2009	16:03	08/25/2009
18 -	__	Air	IA-4 (Ofc back shop - SE corner on counter)		08/24/2009	07:58	08/24/2009	15:58	08/25/2009
19 -	__	Air	IA-5 (North wall - NE corner ofc back shop on counter)		08/24/2009	07:55	08/24/2009	15:59	08/25/2009
20 -	__	Air	IA-6 (Ofc back shop in cage)		08/24/2009	07:57	08/24/2009	16:00	08/25/2009
21 -	__	Air	Outdoor air SE side of office - 11' from building		08/24/2009	08:05	08/24/2009	16:15	08/25/2009
22 -	__	Air	Outdoor air - SW corner Quonset 17' from building		08/24/2009	08:10	08/24/2009	16:17	08/25/2009

Analysis Comments About Results For This Analysis

1 VOCs in Air at Ambient Levels by GC/MS

Lab: REAP Contract Lab (Out-Source)

Method: Similar to EPA Region 7 RLAB Method 3230.4E (see comments)

Samples:						
1-__	2-__	3-__	4-__	5-__	6-__	7-__
8-__	9-__	10-__	11-__	12-__	13-__	14-__
15-__	15-FD	16-__	17-__	18-__	19-__	20-__
21-__	22-__					

Comments:

1,2,4-Trichlorobenzene, vinyl chloride and naphthalene were UJ-coded in sample 4521-19. These analytes were not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for these analytes in the laboratory matrix spike and matrix spike duplicate. The actual reporting limits for these analytes may be higher than the reported limits.

2-Hexanone, acetone and 4-methyl-2-pentanone in sample 4521-19 were J-coded. Although the analytes in question have been positively identified in the sample, the quantitations are estimates (J-coded) due to high recoveries of these analytes in the laboratory matrix spike. The actual concentrations for these analytes may be lower than the reported values.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	8.1	45.1	31.2	7.5
Benzene	ug/m3	1.6 U	1.6 U	1.6 U	1.6 U
Bromodichloromethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	ug/m3	1.9 U	1.9 U	1.9 U	1.9 U
2-Butanone	ug/m3	1.5	7.8	4.3	2.4
Carbon Disulfide	ug/m3	1.6 U	1.6 U	1.6 U	1.6 U
Carbon Tetrachloride	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U
Chlorobenzene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	ug/m3	2.4 U	2.4 U	2.4 U	2.4 U
Chloromethane	ug/m3	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/m3	4.3 U	4.3 U	4.3 U	4.3 U
1,2-Dibromoethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,3-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,1-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,1-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
trans-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Ethyl Benzene	ug/m3	2.2 U	4.2	2.2 U	2.2 U
Heptane	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	ug/m3	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	ug/m3	1.8 U	1.8 U	1.8 U	1.8 U
2-Hexanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Isopropylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Methylene Chloride	ug/m3	2.6	7.5	2.5	3
4-Methyl-2-Pentanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Naphthalene	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Styrene	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Tetrachloroethene	ug/m3	3.4 U	3.4 U	420	22.8
Toluene	ug/m3	1.9 U	1.9 U	1.9 U	1.9 U
1,2,4-Trichlorobenzene	ug/m3	3.7 U	3.7 U	3.7 U	3.7 U
1,1,1-Trichloroethane	ug/m3	2.7 U	2.7 U	3.7	2.7 U
1,1,2-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
Trichloroethene	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2,4-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
1,3,5-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
m and/or p-Xylene	ug/m3	2.2 U	5.6	2.2 U	2.2 U
o-Xylene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	133	45.9	18.7	27.5
Benzene	ug/m3	1.6 U	2.2	1.6 U	1.6 U
Bromodichloromethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	ug/m3	1.9 U	1.9 U	1.9 U	1.9 U
2-Butanone	ug/m3	15.5	8.5	2.8	6.2
Carbon Disulfide	ug/m3	3.2	1.6 U	1.6 U	3.3
Carbon Tetrachloride	ug/m3	3.1 U	3.7	3.1 U	3.1 U
Chlorobenzene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	ug/m3	6.3	93.3	46.7	2.4 U
Chloromethane	ug/m3	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/m3	4.3 U	4.3 U	4.3 U	4.3 U
1,2-Dibromoethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,3-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,1-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,1-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
trans-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Ethyl Benzene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U
Heptane	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	ug/m3	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	ug/m3	1.8 U	2.3	1.8 U	1.8 U
2-Hexanone	ug/m3	3.2	2.1 U	2.1 U	2.1 U
Isopropylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Methylene Chloride	ug/m3	3.1	3.6	3.9	5.9
4-Methyl-2-Pentanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Naphthalene	ug/m3	5.2 U	5.2 U	5.2 U	5.4
Styrene	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Tetrachloroethene	ug/m3	1350	123	185	6
Toluene	ug/m3	1.9 U	1.9	1.9 U	2.8
1,2,4-Trichlorobenzene	ug/m3	3.7 U	3.7 U	3.7 U	3.7 U
1,1,1-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
Trichloroethene	ug/m3	39.9	2.7 U	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2,4-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
1,3,5-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
m and/or p-Xylene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U
o-Xylene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	8.9	5.4	27.6	28.5
Benzene	ug/m3	1.6 U	1.6 U	6.7	8.6
Bromodichloromethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	ug/m3	1.9 U	1.9 U	1.9 U	1.9 U
2-Butanone	ug/m3	2.4	1.5 U	1.5 U	1.5 U
Carbon Disulfide	ug/m3	1.6 U	1.6 U	1.6 U	1.6 U
Carbon Tetrachloride	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U
Chlorobenzene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	ug/m3	2.4 U	2.4 U	2.4 U	2.4 U
Chloromethane	ug/m3	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/m3	4.3 U	4.3 U	4.3 U	4.3 U
1,2-Dibromoethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,3-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,1-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,1-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
trans-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Ethyl Benzene	ug/m3	2.2 U	2.2 U	4.2	5.3
Heptane	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	ug/m3	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	ug/m3	1.8 U	2.9	7.7	8.8
2-Hexanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Isopropylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Methylene Chloride	ug/m3	3.6	17.4	32.8	34
4-Methyl-2-Pentanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Naphthalene	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Styrene	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Tetrachloroethene	ug/m3	36.6	3.4 U	3.4 U	3.4 U
Toluene	ug/m3	1.9 U	1.9 U	23.1	28.1
1,2,4-Trichlorobenzene	ug/m3	3.7 U	3.7 U	3.7 U	3.7 U
1,1,1-Trichloroethane	ug/m3	74.6	2.7 U	2.7 U	2.7 U
1,1,2-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
Trichloroethene	ug/m3	2.7 U	2.7 U	2.7 U	3
1,1,2-Trichlorotrifluoroethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2,4-Trimethylbenzene	ug/m3	2.5 U	2.5 U	4.5	5.8
1,3,5-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
m and/or p-Xylene	ug/m3	2.2 U	2.2 U	13.1	16.4
o-Xylene	ug/m3	2.2 U	2.2 U	4.4	5.5

Analysis/ Analyte	Units	13-__	14-__	15-__	15-FD
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	27.7	35	59.2	67.2
Benzene	ug/m3	7.4	7.5	1.6 U	1.6 U
Bromodichloromethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	ug/m3	1.9 U	1.9 U	1.9 U	1.9 U
2-Butanone	ug/m3	2.5	4.1	11.3	12.4
Carbon Disulfide	ug/m3	1.6 U	1.6 U	1.6 U	1.6 U
Carbon Tetrachloride	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U
Chlorobenzene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	ug/m3	2.4 U	2.4 U	2.4 U	2.4 U
Chloromethane	ug/m3	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/m3	4.3 U	4.3 U	4.3 U	4.3 U
1,2-Dibromoethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,3-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,1-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,1-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	2.4	2.3 U	2.3 U	2.3 U
cis-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
trans-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Ethyl Benzene	ug/m3	4.7	4.5	2.2 U	2.2 U
Heptane	ug/m3	2.7	2.2	2.1 U	2.1 U
Hexachlorobutadiene	ug/m3	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	ug/m3	7.9	7.8	1.8 U	1.8 U
2-Hexanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Isopropylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Methylene Chloride	ug/m3	43.3	35.5	1.7 U	3.4
4-Methyl-2-Pentanone	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Naphthalene	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Styrene	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Tetrachloroethene	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Toluene	ug/m3	23.8	24.5	3.7	3.4
1,2,4-Trichlorobenzene	ug/m3	3.7 U	3.7 U	3.7 U	3.7 U
1,1,1-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
Trichloroethene	ug/m3	3.8	3.7	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2,4-Trimethylbenzene	ug/m3	5.2	4.7	2.5 U	2.5 U
1,3,5-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U

Analysis/ Analyte	Units	13-__	14-__	15-__	15-FD
m and/or p-Xylene	ug/m3	14.5	13.8	4	3.5
o-Xylene	ug/m3	4.9	4.7	2.2 U	2.2 U

Analysis/ Analyte	Units	16-__	17-__	18-__	19-__
1 VOCs in Air at Ambient Levels by GC/MS					
Acetone	ug/m3	59.6	56.5	27.4	25.3 J
Benzene	ug/m3	1.6 U	1.6 U	1.6 U	1.6 U
Bromodichloromethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	ug/m3	1.9 U	1.9 U	1.9 U	1.9 U
2-Butanone	ug/m3	12.4	18.3	7.6	8.5
Carbon Disulfide	ug/m3	1.6 U	1.6 U	1.6 U	1.6 U
Carbon Tetrachloride	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U
Chlorobenzene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	ug/m3	2.4 U	2.4 U	2.4 U	2.4 U
Chloromethane	ug/m3	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/m3	4.3 U	4.3 U	4.3 U	4.3 U
1,2-Dibromoethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,3-Dichlorobenzene	ug/m3	3 U	3 U	3 U	3 U
1,1-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/m3	2 U	2 U	2 U	2 U
1,1-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
cis-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
trans-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U	2.3 U
Ethyl Benzene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U
Heptane	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	ug/m3	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	ug/m3	1.8 U	2.5	3.7	1.8 U
2-Hexanone	ug/m3	2.1 U	2.1 U	2.1 U	8.1 J
Isopropylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Methylene Chloride	ug/m3	5.4	13.7	26	3.8
4-Methyl-2-Pentanone	ug/m3	2.1 U	2.1 U	2.1 U	3.1 J
Naphthalene	ug/m3	5.2 U	5.2 U	5.2 U	5.2 UJ
Styrene	ug/m3	2.1 U	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Tetrachloroethene	ug/m3	3.4 U	3.4 U	3.4 U	3.4 U
Toluene	ug/m3	3.5	6.1	20.6	1.9 U
1,2,4-Trichlorobenzene	ug/m3	3.7 U	3.7 U	3.7 U	3.7 UJ
1,1,1-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
Trichloroethene	ug/m3	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U
1,2,4-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
1,3,5-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.3 U	1.3 U	1.3 U	1.3 UJ

Analysis/ Analyte	Units	16-__	17-__	18-__	19-__
m and/or p-Xylene	ug/m3	3.5	4.9	2.2 U	2.3
o-Xylene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U

Analysis/ Analyte	Units	20-__	21-__	22-__
1 VOCs in Air at Ambient Levels by GC/MS				
Acetone	ug/m3	33.6	12.2	14.3
Benzene	ug/m3	1.6 U	1.6 U	1.6 U
Bromodichloromethane	ug/m3	3.4 U	3.4 U	3.4 U
Bromoform	ug/m3	5.2 U	5.2 U	5.2 U
Bromomethane	ug/m3	1.9 U	1.9 U	1.9 U
2-Butanone	ug/m3	5.3	1.5	1.8
Carbon Disulfide	ug/m3	1.6 U	1.6 U	1.6 U
Carbon Tetrachloride	ug/m3	3.1 U	3.1 U	3.1 U
Chlorobenzene	ug/m3	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.3 U	1.3 U	1.3 U
Chloroform	ug/m3	2.4 U	2.4 U	2.4 U
Chloromethane	ug/m3	1 U	1 U	1 U
Dibromochloromethane	ug/m3	4.3 U	4.3 U	4.3 U
1,2-Dibromoethane	ug/m3	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	3 U	3 U	3 U
1,3-Dichlorobenzene	ug/m3	3 U	3 U	3 U
1,1-Dichloroethane	ug/m3	2 U	2 U	2 U
1,2-Dichloroethane	ug/m3	2 U	2 U	2 U
1,1-Dichloroethene	ug/m3	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U
trans-1,2-Dichloroethene	ug/m3	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	2.3 U	2.3 U	2.3 U
cis-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U
trans-1,3-Dichloropropene	ug/m3	2.3 U	2.3 U	2.3 U
Ethyl Benzene	ug/m3	2.2 U	2.2 U	2.2 U
Heptane	ug/m3	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	ug/m3	5.3 U	5.3 U	5.3 U
Hexane	ug/m3	1.8 U	1.8 U	1.8 U
2-Hexanone	ug/m3	2.1 U	2.1 U	2.1 U
Isopropylbenzene	ug/m3	2.5 U	2.5 U	2.5 U
Methylene Chloride	ug/m3	4.4	15.8	3
4-Methyl-2-Pentanone	ug/m3	2.1 U	2.1 U	2.1 U
Naphthalene	ug/m3	5.2 U	5.2 U	5.2 U
Styrene	ug/m3	2.1 U	2.1 U	2.1 U
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	3.4 U	3.4 U
Tetrachloroethene	ug/m3	3.4 U	3.4 U	3.4 U
Toluene	ug/m3	2	1.9 U	1.9 U
1,2,4-Trichlorobenzene	ug/m3	3.7 U	3.7 U	3.7 U
1,1,1-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U
1,1,2-Trichloroethane	ug/m3	2.7 U	2.7 U	2.7 U
Trichloroethene	ug/m3	2.7 U	2.7 U	2.7 U
1,1,2-Trichlorotrifluoroethane	ug/m3	3.8 U	3.8 U	3.8 U
1,2,4-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U
1,3,5-Trimethylbenzene	ug/m3	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.3 U	1.3 U	1.3 U

Analysis/ Analyte	Units	20-__	21-__	22-__
m and/or p-Xylene	ug/m3	2.2 U	2.2 U	2.2 U
o-Xylene	ug/m3	2.2 U	2.2 U	2.2 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4521

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until ______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 09/28/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4522

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager:	Brian Zurbuchen	Org: SUPR/IANE	Phone: 913-551-7101
Project ID:	BZA72Z02		
Project Desc:	Garvey Elevator - RI/FS sampling		
Location:	Hastings	State: Nebraska	Program: Superfund
Site Name:	GARVEY ELEVATOR - OFF-SITE GROUNDWATER		Site ID: A72Z Site OU: 02
Purpose:	Site Characterization		GPRA PRC: 302DD2C

This ASR is OU02 DPT GW sampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

- __ = Field Sample
- FB = Field Blank
- FD = Field Duplicate

Units: Specific units in which results are reported.

- Deg C = Degrees Celsius
- NTU = Nephelometric Turbidity Units
- SU = Standard Units (pH)
- mg/L = Milligrams per Liter
- ug/L = Micrograms per Liter
- umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

- (Blank) = Values have been reviewed and found acceptable for use.
- J = The identification of the analyte is acceptable; the reported value is an estimate.
- U = The analyte was not detected at or above the reporting limit.
- UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	TS2-06 (214-218')		08/23/2009	11:55			08/25/2009
2 -	__	Water	TS2-06 (204-208)		08/23/2009	12:40			08/25/2009
3 -	__	Water	TS2-06 (194-198')		08/23/2009	13:20			08/25/2009
3 -	FD	Water	TS2-06 (194-198')		08/23/2009	13:20			08/25/2009
5 -	__	Water	TS2-06 (184-188')		08/23/2009	14:25			08/25/2009
6 -	__	Water	TS2-06 (174-178)		08/23/2009	14:55			08/25/2009
7 -	__	Water	TS2-06 (164-168)		08/23/2009	15:30			08/25/2009
8 -	__	Water	TS2-06 (151-155)		08/23/2009	15:55			08/25/2009
9 -	__	Water	TS2-06 (144-148')		08/23/2009	16:55			08/25/2009
10 -	__	Water	TS2-06 (134-138')		08/24/2009	09:15			08/25/2009
11 -	__	Water	TS2-07 (213-217')		08/25/2009	08:15			08/26/2009
11 -	FD	Water	TS2-07 (213-217')/Field Duplicate of sample 11		08/25/2009	08:15			08/26/2009
13 -	__	Water	TS2-07 (204-208')		08/25/2009	08:50			08/26/2009
14 -	__	Water	TS2-07 (194-198')		08/25/2009	09:15			08/26/2009
15 -	__	Water	TS2-07 (184-188')		08/25/2009	09:55			08/26/2009
16 -	__	Water	TS2-07 (174-178')		08/25/2009	08:20			08/26/2009
17 -	__	Water	TS2-07 (164-168')		08/25/2009	10:45			08/26/2009
18 -	__	Water	TS2-07 (151-155')		08/25/2009	11:15			08/26/2009
19 -	__	Water	TS2-07 (144-148')		08/25/2009	12:15			08/26/2009
20 -	__	Water	TS2-07 (134-138')		08/25/2009	13:15			08/26/2009
21 -	__	Water	TS104 (219-223')		09/01/2009	11:05			09/02/2009
22 -	__	Water	TS104 (209-213')		09/01/2009	11:35			09/02/2009
23 -	__	Water	TS104 (199-203')		09/01/2009	12:05			09/02/2009
24 -	__	Water	TS104 (189-193')		09/01/2009	12:30			09/02/2009
25 -	__	Water	TS104 (179-183')		09/01/2009	12:55			09/02/2009
26 -	__	Water	TS104 (169-173')		09/01/2009	13:20			09/02/2009
26 -	FD	Water	TS104 (169-173')/Field Duplicate of sample 26		09/01/2009	13:20			09/02/2009
28 -	__	Water	TS104 (157-161')		09/01/2009	13:50			09/02/2009
29 -	__	Water	TS104 (148-152')		09/01/2009	14:10			09/02/2009
30 -	__	Water	TS104 (139-143')		09/01/2009	14:50			09/02/2009
31 -	__	Water	TS104 (129-133')		09/01/2009	15:15			09/02/2009
32 -	__	Water	TS103 (219-223')		09/02/2009	11:55			09/03/2009
33 -	__	Water	TS103 (209-213)		09/02/2009	12:25			09/03/2009
34 -	__	Water	TS103 (199-203)		09/02/2009	13:05			09/03/2009
35 -	__	Water	TS103 (189-193)		09/02/2009	13:30			09/03/2009
36 -	__	Water	TS103 (179-183)		09/02/2009	14:00			09/03/2009
36 -	FD	Water	TS103 (179-183)/Field Duplicate of sample 36		09/02/2009	14:00			09/03/2009
38 -	__	Water	TS103 (169-173)		09/02/2009	14:20			09/03/2009
39 -	__	Water	TS103 (159-163)		09/02/2009	14:50			09/03/2009
40 -	__	Water	TS103 (143-147)		09/02/2009	15:20			09/03/2009
41 -	__	Water	TS103 (134-138')		09/02/2009	15:45			09/03/2009
42 -	__	Water	TS103 (124-128')		09/02/2009	16:00			09/03/2009
43 -	__	Water	TS102 (181-185')		09/03/2009	15:20			09/04/2009

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
43 -	FD	Water	TS102 (181-185')/Field Duplicate of sample 43		09/03/2009	15:20			09/04/2009
45 -	__	Water	TS102 (169-173)		09/03/2009	15:45			09/04/2009
46 -	__	Water	TS102 (159-163')		09/03/2009	16:10			09/04/2009
47 -	__	Water	TS102 (143-147')		09/03/2009	16:30			09/08/2009
48 -	__	Water	TS102 (134-138)		09/03/2009	16:50			09/08/2009
49 -	__	Water	TS102 (124-128)		09/03/2009	17:25			09/08/2009
50 -	__	Water	TS203 (178-182')		09/04/2009	14:40			09/08/2009
51 -	__	Water	TS203 (169-173)		09/04/2009	15:05			09/08/2009
52 -	__	Water	TS203 (159-173)		09/04/2009	15:35			09/08/2009
52 -	FD	Water	TS203 (159-173)/Field Duplicate of sample 52		09/04/2009	15:35			09/08/2009
54 -	__	Water	TS203 (147-151')		09/04/2009	17:15			09/08/2009
55 -	__	Water	TS203 (130-134)		09/05/2009	08:40			09/08/2009
56 -	__	Water	TS204 (184-188)		09/05/2009	16:10			09/08/2009
57 -	__	Water	TS204 (219-223')		09/06/2009	14:10			09/08/2009
58 -	__	Water	TS204 (209-213')		09/06/2009	14:50			09/08/2009
59 -	__	Water	TS204 (199-203)		09/06/2009	15:15			09/08/2009
60 -	__	Water	TS204 (189-193)		09/06/2009	15:35			09/08/2009
61 -	__	Water	TS204 (179-183)		09/06/2009	16:00			09/08/2009
62 -	__	Water	TS204 (169-173')		09/06/2009	16:20			09/08/2009
62 -	FD	Water	TS204 (169-173')/Field Duplicate of sample 62		09/06/2009	16:20			09/08/2009
64 -	__	Water	TS204 (159-163')		09/06/2009				09/08/2009
65 -	__	Water	TS204 (147-151')		09/06/2009	17:05			09/08/2009
66 -	__	Water	TS204 (134-138')		09/06/2009	17:40			09/08/2009
67 -	__	Water	TS101 (178-182' bgs)		09/07/2009	14:00			09/08/2009
68 -	__	Water	TS101 (168-172' bgs)		09/07/2009	14:25			09/08/2009
69 -	__	Water	TS101 (158-162' bgs)		09/07/2009	15:00			09/08/2009
69 -	FD	Water	TS101 (158-162' bgs)/Field Duplicate of sample 69		09/07/2009	15:00			09/08/2009
71 -	__	Water	TS101 (143-147)		09/07/2009	15:45			09/08/2009
72 -	__	Water	TS101 (133-137' bgs)		09/07/2009	16:25			09/08/2009
100 -	__	Water	TS304 (209-212' bgs)		09/01/2009	10:40			09/02/2009
101 -	__	Water	TS304 (199-203' bgs)		09/01/2009	11:35			09/02/2009
102 -	__	Water	TS304 (184-188' bgs)		09/01/2009	13:20			09/02/2009
103 -	__	Water	TS304 (174-178' bgs)		09/01/2009	14:20			09/02/2009
103 -	FD	Water	TS304 (174-178' bgs)/Field Duplicate of sample 103		09/01/2009	14:20			09/02/2009
105 -	__	Water	TS304 (164-168' bgs)		09/01/2009	14:55			09/02/2009
106 -	__	Water	TS304 (154-158' bgs)		09/01/2009	15:50			09/03/2009
107 -	__	Water	TS304 (142-146' bgs)		09/01/2009	16:20			09/03/2009
108 -	__	Water	TS304 (134-138' bgs)		09/01/2009	17:00			09/03/2009
109 -	__	Water	TS303 (204-208' bgs)		09/02/2009	13:20			09/03/2009
110 -	__	Water	TS303 (194-198' bgs)		09/02/2009	13:45			09/03/2009
111 -	__	Water	TS303 (184-188' bgs)		09/02/2009	14:15			09/03/2009
112 -	__	Water	TS303 (174-178' bgs)		09/02/2009	14:50			09/03/2009

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
113 -	__	Water	TS303 (164-168' bgs)		09/02/2009	15:25			09/03/2009
114 -	__	Water	TS303 (154-158)		09/02/2009	15:55			09/04/2009
115 -	__	Water	TS303 (142-146)		09/02/2009	16:15			09/04/2009
116 -	__	Water	TS303 (134-138' bgs)		09/02/2009	16:30			09/04/2009
117 -	__	Water	TS303 (124-128' bgs)		09/02/2009	17:00			09/04/2009
118 -	__	Water	TS301 (214-218)		09/03/2009	14:30			09/04/2009
119 -	__	Water	TS301 (204-208' bgs)		09/03/2009	15:50			09/04/2009
119 -	FD	Water	TS301 (204-208' bgs)/Field Duplicate of sample 119		09/03/2009	15:50			09/04/2009
121 -	__	Water	TS301 (194-198' bgs)		09/03/2009	16:10			09/04/2009
122 -	__	Water	TS301 (184-188' bgs)		09/03/2009	16:55			09/08/2009
123 -	__	Water	TS301 (174-178)		09/03/2009	17:20			09/08/2009
124 -	__	Water	TS301 (164-168' bgs)		09/03/2009	17:35			09/08/2009
125 -	__	Water	TS301 (154-158' bgs)		09/04/2009	08:25			09/08/2009
126 -	__	Water	TS301 (139-142' bgs)		09/04/2009	11:40			09/08/2009
127 -	__	Water	TS301 (129-133' bgs)		09/04/2009	12:10			09/08/2009
128 -	__	Water	TS301 (119-123' bgs)		09/04/2009	12:30			09/08/2009
129 -	__	Water	TS305 (198-202' bgs)		09/06/2009	12:30			09/08/2009
130 -	__	Water	TS305 (188-192' bgs)		09/06/2009	13:00			09/08/2009
131 -	__	Water	TS305 (178-182' bgs)		09/06/2009	13:40			09/08/2009
131 -	FD	Water	TS305 (178-182' bgs)/Field Duplicate of sample 131		09/06/2009	13:40			09/08/2009
133 -	__	Water	TS305 (168-172' bgs)		09/06/2009	16:00			09/08/2009
134 -	__	Water	TS305 (158-162' bgs)		09/06/2009	16:45			09/08/2009
135 -	__	Water	TS305 (142-146' bgs)		09/06/2009	17:20			09/08/2009
136 -	__	Water	TS305 (134-138' bgs)		09/06/2009	17:50			09/08/2009
137 -	__	Water	TS305 (124-128' bgs)		09/06/2009	18:30			09/08/2009
231 -	FB	Water	EDB/LDL VOA Trip Blank sample 1		08/23/2009	10:10			08/25/2009
232 -	FB	Water	EDB/LDL VOA Trip Blank sample 2		09/01/2009	14:45			09/02/2009
233 -	FB	Water	EDB/LDL VOA Trip Blank sample 3		09/02/2009	11:45			09/03/2009
234 -	FB	Water	EDB/LDL VOA Trip Blank sample 4		09/03/2009	13:45			09/04/2009
235 -	FB	Water	EDB/LDL VOA Trip Blank sample 5		09/04/2009	08:30			09/08/2009
236 -	FB	Water	EDB/LDL VOA Trip Blank sample 6		09/05/2009	09:35			09/08/2009

Analysis	Comments About Results For This Analysis

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__	11-FD	13-__	14-__
	15-__	16-__	17-__	18-__	19-__	20-__	21-__
	22-__	23-__	24-__	25-__	26-__	26-FD	28-__
	29-__	30-__	31-__	32-__	33-__	34-__	35-__
	36-__	36-FD	38-__	39-__	40-__	41-__	42-__
	43-__	43-FD	45-__	46-__	47-__	48-__	49-__
	50-__	51-__	52-__	52-FD	54-__	55-__	56-__
	57-__	58-__	59-__	60-__	61-__	62-__	62-FD
	64-__	65-__	66-__	67-__	68-__	69-__	69-FD
	71-__	72-__	100-__	101-__	103-__	103-FD	105-__
	106-__	107-__	108-__	109-__	110-__	111-__	112-__
	113-__	114-__	115-__	116-__	117-__	118-__	119-__
	119-FD	121-__	122-__	123-__	124-__	125-__	126-__
	127-__	128-__	129-__	130-__	131-__	131-FD	133-__
	134-__	135-__	136-__	137-__			

Comments:
(N/A)

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__	11-FD	13-__	14-__
	15-__	16-__	17-__	18-__	19-__	20-__	21-__
	22-__	23-__	24-__	25-__	26-__	26-FD	28-__
	29-__	30-__	31-__	32-__	33-__	34-__	35-__
	36-__	36-FD	38-__	39-__	40-__	41-__	42-__
	43-__	43-FD	45-__	46-__	47-__	48-__	49-__
	50-__	51-__	52-__	52-FD	54-__	55-__	56-__
	57-__	58-__	59-__	60-__	61-__	62-__	62-FD
	64-__	65-__	66-__	67-__	68-__	69-__	69-FD
	71-__	72-__	100-__	101-__	103-__	103-FD	105-__
	106-__	107-__	108-__	109-__	110-__	111-__	112-__
	113-__	114-__	115-__	116-__	117-__	118-__	119-__
	119-FD	121-__	122-__	123-__	124-__	125-__	126-__
	127-__	128-__	129-__	130-__	131-__	131-FD	133-__
	134-__	135-__	136-__	137-__			

Analysis	Comments About Results For This Analysis

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	3-FD	5-__	6-__	7-__
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	18-__	19-__	20-__	21-__
22-__	23-__	24-__	25-__	26-__	26-FD	28-__
29-__	30-__	31-__	32-__	33-__	34-__	35-__
36-__	36-FD	38-__	39-__	40-__	41-__	42-__
43-__	43-FD	45-__	46-__	47-__	48-__	49-__
50-__	51-__	52-__	52-FD	54-__	55-__	56-__
57-__	58-__	59-__	60-__	61-__	62-__	62-FD
64-__	65-__	66-__	67-__	68-__	69-__	69-FD
71-__	72-__	100-__	101-__	103-__	103-FD	105-__
106-__	107-__	108-__	109-__	110-__	111-__	112-__
113-__	114-__	115-__	116-__	117-__	118-__	119-__
119-FD	121-__	122-__	123-__	124-__	125-__	126-__
127-__	128-__	129-__	130-__	131-__	131-FD	133-__
134-__	135-__	136-__	137-__			

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	3-FD	5-__	6-__	7-__
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	18-__	19-__	20-__	21-__
22-__	23-__	24-__	25-__	26-__	26-FD	28-__
29-__	30-__	31-__	32-__	33-__	34-__	35-__
36-__	36-FD	38-__	39-__	40-__	41-__	42-__
43-__	43-FD	45-__	46-__	47-__	48-__	49-__
50-__	51-__	52-__	52-FD	54-__	55-__	56-__
57-__	58-__	59-__	60-__	61-__	62-__	62-FD
64-__	65-__	66-__	67-__	68-__	69-__	69-FD
71-__	72-__	100-__	101-__	103-__	103-FD	105-__
106-__	107-__	108-__	109-__	110-__	111-__	112-__
113-__	114-__	115-__	116-__	117-__	118-__	119-__
119-FD	121-__	122-__	123-__	124-__	125-__	126-__

Analysis	Comments About Results For This Analysis

Samples:

127-__	128-__	129-__	130-__	131-__	131-FD	133-__
134-__	135-__	136-__	137-__			

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:

1-__	2-__	3-__	3-FD	5-__	6-__	7-__
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	18-__	19-__	20-__	21-__
22-__	23-__	24-__	25-__	26-__	26-FD	28-__
29-__	30-__	31-__	32-__	33-__	34-__	35-__
36-__	36-FD	38-__	39-__	40-__	41-__	42-__
43-__	43-FD	45-__	46-__	47-__	48-__	49-__
50-__	51-__	52-__	52-FD	54-__	55-__	56-__
57-__	58-__	59-__	60-__	61-__	62-__	62-FD
64-__	65-__	66-__	67-__	68-__	69-__	69-FD
71-__	72-__	100-__	101-__	103-__	103-FD	105-__
106-__	107-__	108-__	109-__	110-__	111-__	112-__
113-__	114-__	115-__	116-__	117-__	118-__	119-__
119-FD	121-__	122-__	123-__	124-__	126-__	127-__
128-__	129-__	130-__	131-__	131-FD	133-__	134-__
135-__	136-__	137-__				

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples:

1-__	2-__	3-__	3-FD	5-__	6-__	7-__
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	18-__	19-__	20-__	21-__
22-__	23-__	24-__	25-__	26-__	26-FD	28-__
29-__	30-__	31-__	32-__	33-__	34-__	35-__
36-__	36-FD	38-__	39-__	40-__	41-__	42-__
43-__	43-FD	45-__	46-__	47-__	48-__	49-__
50-__	51-__	52-__	52-FD	54-__	55-__	56-__
57-__	58-__	59-__	60-__	61-__	62-__	62-FD
64-__	65-__	66-__	67-__	68-__	69-__	69-FD
71-__	72-__	100-__	101-__	102-__	103-__	103-FD
105-__	106-__	107-__	108-__	109-__	110-__	111-__

Analysis	Comments About Results For This Analysis

Samples:

112-__	113-__	114-__	115-__	116-__	117-__	118-__
119-__	119-FD	121-__	122-__	123-__	124-__	125-__
126-__	127-__	128-__	129-__	130-__	131-__	131-FD
133-__	134-__	135-__	136-__	137-__	231-FB	232-FB
233-FB	234-FB	235-FB	236-FB			

Comments:

Results for 1,2-dibromoethane (EDB) are not included with this LDL VOA report. They were analyzed by a LDL VOA Select Ion Monitoring (SIM) method and reported separately with a lower reporting limit.

Low recoveries were reported for 2-butanone-d5 (control limits = 49% - 155%) in samples -60 (48%) and -61 (43%); for chloroethane-d5 (control limits = 71% - 131%) in samples -14 (56%), -29 (63%) and -100 (47%); for 1,2-dichloroethane-d4 (control limits = 78% - 129%) in samples -13 (73%), -14 (76%), -15 (76%) and -62FD (77%); for trans-1,3-dichloropropene-d4 (control limits = 73% - 121%) in samples -1 (69%), -3 (65%), -6 (72%), -8 (70%), -9 (69%), -10 (65%) and -231FB (64%); and for 1,1,2,2-tetrachloroethane-d2 (control limits = 73% - 125%) in samples -3 (72%), -11 (70%), -13 (71%), -48 (69%), -49 (68%), -51 (71%), -59 (71%), -61 (71%) and -62FD (72%).

Acetone and 2-butanone were UJ-coded in samples -60 and -61. Dichlorodifluoromethane, chloromethane, bromomethane, chloroethane and carbon disulfide were UJ-coded in samples -14, -29 and -100. Trichlorofluoromethane, 1,1,2-trichlorotrifluoroethane, methyl acetate, methyl-tert-butyl ether, 1,1,1-trichloroethane, carbon tetrachloride, and 1,2-dichloroethane were UJ-coded in samples -13, -14 and -15. Trichlorofluoromethane, 1,1,2-trichlorotrifluoroethane, methyl acetate, methylene chloride, methyl-tert-butyl ether, 1,1,1-trichloroethane and 1,2-dichloroethane were UJ-coded in sample -62FD. cis-1,3-Dichloropropene, trans-1,3-dichloropropene and 1,1,2-trichloroethane were UJ-coded in samples -1, -3, -6, -8, -9, -10 and -231FB. 1,1,2,2-Tetrachloroethane and 1,2-dibromo-3-chloropropane were UJ-coded in samples -3, -11, -13, -48, -49, -51, -59, -61 and -62FD. These analytes were not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to low recoveries of the surrogate analytes. The actual reporting limits for these analytes may be higher than the reported values.
Methylene chloride was J-coded in samples -13, -14 and -15; and carbon tetrachloride was J-coded in sample -62FD. Although the analytes in question have been positively identified in the samples, the quantitations are an estimate (J-coded) due to low recovery of a surrogate analyte in these samples. The actual concentration for these analytes may be higher than the reported values.

High recovery was reported for 2-butanone-d5 (control limits = 49% - 155%) in sample -29 (174%).
2-Butanone was J-coded in sample -29. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of a surrogate analyte in this sample. The actual concentration for this analyte may be lower than the reported value.

High recovery was reported for toluene (control limits = 76% - 125%) in samples -2MS (130%) and -2MSD (138%).

Analysis	Comments About Results For This Analysis

Toluene was J-coded in sample -2. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of this analyte in the laboratory matrix spike / laboratory matrix spike duplicate. The actual concentration for this analyte may be lower than the reported value.

A high RPD was calculated for 1,1-dichloroethene (27% vs. 14%) in the matrix spike / matrix spike duplicate of sample -25. 1,1-Dichloroethene was UJ-coded in sample -25. This analyte was not found in the sample at or above the reporting limit; however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate. The actual reporting limits for this analyte may be higher than the reported value.

2 VOCs in Water by GC/MS for Low Detection Limits

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__	11-FD	13-__	14-__
	15-__	16-__	17-__	18-__	19-__	20-__	21-__
	22-__	23-__	24-__	25-__	26-__	26-FD	28-__
	29-__	30-__	31-__	32-__	33-__	34-__	35-__
	36-__	36-FD	38-__	39-__	40-__	41-__	42-__
	43-__	43-FD	45-__	46-__	47-__	48-__	49-__
	50-__	51-__	52-__	52-FD	54-__	55-__	56-__
	57-__	58-__	59-__	60-__	61-__	62-__	62-FD
	64-__	65-__	66-__	67-__	68-__	69-__	69-FD
	71-__	72-__	100-__	101-__	102-__	103-__	103-FD
	105-__	106-__	107-__	108-__	109-__	110-__	111-__
	112-__	113-__	114-__	115-__	116-__	117-__	118-__
	119-__	119-FD	121-__	122-__	123-__	124-__	125-__
	126-__	127-__	128-__	129-__	130-__	131-__	131-FD
	133-__	134-__	135-__	136-__	137-__	231-FB	232-FB
	233-FB	234-FB	235-FB	236-FB			

Comments:

Results for 1,2-dibromoethane (EDB) reported in this document were analyzed by a LDL VOA Select Ion Monitoring (SIM) method to achieve a lower reporting limit.

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	579	405	421	421
1 pH of Water by Field Measurement					
pH	SU	7.38	7.22	7.17	7.17
1 Temperature of Water by Field Measurement					
Temperature	Deg C	26.86	24.16	24.09	24.09
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.22	1.90	4.15	4.15
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	6.3	6.4	6.5	8.2
Benzene	ug/L	0.73	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	11	0.88	0.50 U
Chlorobenzene	ug/L	0.77	0.50 U	0.51	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	3.1	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.75	0.50 U	0.93	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.84	3.1	0.57	2.9

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	1.6	0.60 J	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	486	477	504	598
1 pH of Water by Field Measurement					
pH	SU	7.38	7.50	7.56	7.05
1 Temperature of Water by Field Measurement					
Temperature	Deg C	24.4	19.11	19.62	19.27
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.21	0.08	0.34	0.19
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	9.7	11
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 UJ
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 UJ
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	2.5	2.4	2.6	2.5

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 UJ
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	9-__	10-__	11-__	11-FD
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	638	761	518	518
1 pH of Water by Field Measurement					
pH	SU	7.13	6.77	7.18	7.18
1 Temperature of Water by Field Measurement					
Temperature	Deg C	26.9	25.22	19.23	19.23
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.17	0.37	0.16	0.16
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1003	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	11	21	12	11
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.54
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	76	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.60	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	2.5	2.4	1.1	1.1

Analysis/ Analyte	Units	9-__	10-__	11-__	11-FD
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.57	1.9	0.59	0.60
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	363	459	495	530
1 pH of Water by Field Measurement					
pH	SU	7.36	6.5	6.45	7.16
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.05	18.10	18.6	19.6
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.80	0.50	0.23	0.86
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	6.3	5.5	8.1	5.8
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 UJ	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Methyl tert-butyl ether	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.84 J	0.78 J	0.78 J	0.82

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	17-__	18-__	19-__	20-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	524	604	630	681
1 pH of Water by Field Measurement					
pH	SU	6.57	6.30	7.17	6.89
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.8	20.67	20.94	29.0
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.0	2.95	1.26	0.35
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	3.8	0.87	0.89	0.86

Analysis/ Analyte	Units	17-__	18-__	19-__	20-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	21-__	22-__	23-__	24-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	458	438	533	572
1 pH of Water by Field Measurement					
pH	SU	6.42	6.76	6.60	6.55
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.76	16.91	17.46	17.86
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.28	0.31	0.57	0.28
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	3.9	1.0	13	2.2
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	3.5	8.1	4.8	4.7
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	21-__	22-__	23-__	24-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	25-__	26-__	26-FD	28-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	604	567	567	567
1 pH of Water by Field Measurement					
pH	SU	7.11	7.12	7.12	7.12
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.0	18.6	18.6	18.6
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.08	0.24	0.24	0.24
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	1.5	0.91	1.7	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	3.1	1.9	1.2	1.5
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	25-__	26-__	26-FD	28-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	29-__	30-__	31-__	32-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	539	516	553	370
1 pH of Water by Field Measurement					
pH	SU	6.48	6.81	6.20	6.64
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.13	17.95	19.87	20.57
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.10	0.26	2.68	0.63
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	6.7 J	8.3	6.8	5.0 U
Carbon Disulfide	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.52	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	29-__	30-__	31-__	32-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	1.5
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	33-__	34-__	35-__	36-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	299	360	334	353
1 pH of Water by Field Measurement					
pH	SU	5.72	6.54	6.31	6.98
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.13	17.71	17.58	17.73
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.50	1.44	0.08	0.04
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	2.8	0.70	3.0
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.68	1.1	6.0
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	33-__	34-__	35-__	36-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.63	0.50 U	0.50 U	0.51
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	36-FD	38-__	39-__	40-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	353	450	567	583
1 pH of Water by Field Measurement					
pH	SU	6.98	7.15	6.76	6.77
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.37	17.85	18.10	18.92
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.04	0.20	0.16	0.35
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	7.2	0.75	39	19
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	4.3	21	46	23
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	36-FD	38-__	39-__	40-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.60
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	41-__	42-__	43-__	43-FD
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	663	896	489	489
1 pH of Water by Field Measurement					
pH	SU	6.98	6.73	6.52	6.52
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.94	16.00	23.32	23.32
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.13	0.11	2.60	2.60
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	2.9	1.8	24	19
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	11	4.9	2.4	2.1
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	41-__	42-__	43-__	43-FD
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.95	0.89
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	45-__	46-__	47-__	48-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	436	562	505	765
1 pH of Water by Field Measurement					
pH	SU	6.13	5.93	6.87	6.90
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.67	18.93	19.39	19.26
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.32	0.40	0.74	4.86
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	12	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	58	100	27	44
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	3.8	110	32	5.8
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.59	0.93	0.50 U	0.50 U

Analysis/ Analyte	Units	45-__	46-__	47-__	48-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.57	0.50 U	0.78	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	49-__	50-__	51-__	52-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	878	624	576	600
1 pH of Water by Field Measurement					
pH	SU	6.60	5.84	6.72	5.89
1 Temperature of Water by Field Measurement					
Temperature	Deg C	22.25	20.95	20.66	18.88
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.95	2.11	0.97	1.49
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	20	11	15	1.9
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	4.5	1.6	5.3	3.4
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	49-__	50-__	51-__	52-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.61	0.91	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	52-FD	54-__	55-__	56-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	600	602	800	556
1 pH of Water by Field Measurement					
pH	SU	5.89	6.63	5.67	5.64
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.88	18.05	15.73	25.0
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.49	0.85	0.77	0.92
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	1.3
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	1.3
Carbon Tetrachloride	ug/L	1.5	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.82
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	2.9	0.81	0.50 U	10
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	52-FD	54-__	55-__	56-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.53	1.0	4.8
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	57-__	58-__	59-__	60-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	459	393	428	446
1 pH of Water by Field Measurement					
pH	SU	6.55	5.86	5.37	5.92
1 Temperature of Water by Field Measurement					
Temperature	Deg C	26.98	26.11	22.84	22.01
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.39	2.94	1.67	0.38
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	18	64	24	5.9
Chlorobenzene	ug/L	0.72	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	16	5.2	19	19
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	1.4	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	57-__	58-__	59-__	60-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.91	0.50 U	0.50	0.54
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	61-__	62-__	62-FD	64-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	558	532	532	568
1 pH of Water by Field Measurement					
pH	SU	6.14	6.70	6.70	6.78
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.22	21.23	21.23	19.69
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.30	0.08	0.08	0.15
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.65	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	9.2	0.50 U	1.4 J	4.4
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	21	18	17	6.4
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U

Analysis/ Analyte	Units	61-__	62-__	62-FD	64-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 UJ	0.50 U	0.50 UJ	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50	0.50	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	65-__	66-__	67-__	68-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	584	626	669	601
1 pH of Water by Field Measurement					
pH	SU	6.37	6.95	5.91	5.67
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.02	24.4	22.49	19.80
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.10	0.24	2.63	5.31
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	12	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.99	2.2	410	380
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	6.8	2.6	110	18
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.59	0.50 U

Analysis/ Analyte	Units	65-__	66-__	67-__	68-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.59	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	69-__	69-FD	71-__	72-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	572	572	611	668
1 pH of Water by Field Measurement					
pH	SU	7.02	7.02	6.81	5.92
1 Temperature of Water by Field Measurement					
Temperature	Deg C	21.32	21.32	21.40	20.5
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.50	0.50	0.68	1.56
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	450	400	150	41
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	12	140	57	59
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.77	0.57	0.52

Analysis/ Analyte	Units	69-__	69-FD	71-__	72-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.62	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	100-__	101-__	102-__	103-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	381	337		626
1 pH of Water by Field Measurement					
pH	SU	6.92	7.23		6.96
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.44	14.91		15.78
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.45	5.94		4.25
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999		>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	6.5	5.0 U
Carbon Disulfide	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.99	3.3	0.50 U	0.50 U
Chlorobenzene	ug/L	0.51	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.56	0.50 U
Chloromethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	100-__	101-__	102-__	103-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	1.4	0.52	1.1	0.92
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	1.00
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	103-FD	105-__	106-__	107-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	626	649	855	842
1 pH of Water by Field Measurement					
pH	SU	6.96	7.39	7.13	7.34
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.78	16.41	17.35	17.69
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.25	0.44	1.96	0.26
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	103-FD	105-__	106-__	107-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.66	0.69	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.62	0.59	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	108-__	109-__	110-__	111-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1004	370	320	344
1 pH of Water by Field Measurement					
pH	SU	7.21	6.98	7.28	7.32
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.11	19.32	17.87	17.83
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.06	2.31	1.72	4.26
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	12	13	1.1
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	2.6	1.6	1.3
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.65	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	108-__	109-__	110-__	111-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.77	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	112-__	113-__	114-__	115-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	475	552	661	767
1 pH of Water by Field Measurement					
pH	SU	7.29	7.29	7.31	7.40
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.95	17.5	16.76	16.68
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.84	0.93	5.96	0.44
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	1.2
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	112-__	113-__	114-__	115-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	116-__	117-__	118-__	119-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	971	984	347	308
1 pH of Water by Field Measurement					
pH	SU	7.23	7.32	6.98	7.35
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.67	17.25	19.43	21.12
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.17	0.04	0.66	1.42
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.68	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.59
Chlorobenzene	ug/L	0.50 U	0.50 U	0.65	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.53	0.50 U

Analysis/ Analyte	Units	116-__	117-__	118-__	119-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	1.9	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	119-FD	121-__	122-__	123-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	308	307	421	311
1 pH of Water by Field Measurement					
pH	SU	7.35	7.25	7.26	7.26
1 Temperature of Water by Field Measurement					
Temperature	Deg C	21.12	17.99	17.39	17.48
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.42	1.10	4.77	0.36
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.55	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.64	0.56	0.50 U	0.50 U

Analysis/ Analyte	Units	119-FD	121-__	122-__	123-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	124-__	125-__	126-__	127-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	345	382	521	670
1 pH of Water by Field Measurement					
pH	SU	7.52	6.68	7.08	7.3
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.83	15.07	16.74	16.78
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.08	45	1.14	0.07
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999		>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.63	0.50 U

Analysis/ Analyte	Units	124-__	125-__	126-__	127-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	128-__	129-__	130-__	131-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1547	450	318	333
1 pH of Water by Field Measurement					
pH	SU	7.34	7.10	7.66	7.41
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.28	21.69	20.59	20.60
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.05	0.44	0.90	10.41
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	128-__	129-__	130-__	131-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	1.3	0.83	0.57
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	131-FD	133-__	134-__	135-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	333	471	592	524
1 pH of Water by Field Measurement					
pH	SU	7.41	7.35	7.28	7.29
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.60	20.23	23.15	18.31
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	10.41	0.28	1.41	5.36
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	131-FD	133-__	134-__	135-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.58	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	136-__	137-__	231-FB	232-FB
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	581	669		
1 pH of Water by Field Measurement					
pH	SU	7.41	7.26		
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.10	19.32		
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.47	0.27		
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999		
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	1.0	2.3	0.50 U

Analysis/ Analyte	Units	136-__	137-__	231-FB	232-FB
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.66	1.2
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	1.2	2.7
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

Analysis/ Analyte	Units	233-FB	234-FB	235-FB	236-FB
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.59
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.56	1.3	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.65	0.99	0.73	1.8
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	233-FB	234-FB	235-FB	236-FB
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	1.6	2.3	1.8	4.4
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2 VOCs in Water by GC/MS for Low Detection Limits					
1,2-Dibromoethane	ug/L	0.050 U	0.050 U	0.050 U	0.050 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4522

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 09/11/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4523

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager:	Brian Zurbuchen	Org:	SUPR/IANE	Phone:	913-551-7101
Project ID:	BZA72Z02				
Project Desc:	Garvey Elevator - RI/FS sampling				
Location:	Hastings	State:	Nebraska	Program:	Superfund
Site Name:	GARVEY ELEVATOR - OFF-SITE GROUNDWATER			Site ID:	A72Z Site OU: 02
Purpose:	Site Characterization			GPRA PRC:	302DD2C

This ASR is OU02 DPT GW sampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

- __ = Field Sample
- FB = Field Blank
- FD = Field Duplicate

Units: Specific units in which results are reported.

- Deg C = Degrees Celsius
- NTU = Nephelometric Turbidity Units
- SU = Standard Units (pH)
- mg/L = Milligrams per Liter
- ug/L = Micrograms per Liter
- umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

- (Blank) = Values have been reviewed and found acceptable for use.
- J = The identification of the analyte is acceptable; the reported value is an estimate.
- U = The analyte was not detected at or above the reporting limit.
- UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z02 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	TS1-05 at 190		08/19/2009	18:00			08/21/2009
2 -	__	Water	TS1-05 at 180'		08/20/2009	09:30	08/20/2009	09:32	08/21/2009
3 -	__	Water	TS1-05 at 170-174'		08/20/2009	11:00	08/20/2009		08/21/2009
4 -	__	Water	TS1-05 at 160-164'		08/20/2009	13:30	08/20/2009	13:31	08/21/2009
5 -	__	Water	TS1-05 at 151-155'		08/20/2009	16:40	08/20/2009	16:47	08/21/2009
6 -	__	Water	TS1-05 (140')		08/21/2009	08:30			08/25/2009
6 -	FD	Water	TS1-05 (140')/Field Duplicate of sample 6		08/21/2009	08:30			08/25/2009
8 -	__	Water	TS1-05 (130-134')		08/21/2009	09:00			08/25/2009
9 -	__	Water	TS2-02 (214-218')		08/22/2009	08:00			08/25/2009
10 -	__	Water	TS2-02 (205-209')		08/22/2009	08:35			08/25/2009
11 -	__	Water	TS2-02 (195-199)		08/22/2009	09:10	08/22/2009	09:12	08/25/2009
11 -	FD	Water	TS2-02 (195-199)/Field Duplicate of sample 11		08/22/2009	09:10	08/22/2009	09:12	08/25/2009
13 -	__	Water	TS2-02 (184-189)		08/22/2009	09:40			08/25/2009
14 -	__	Water	TS2-02 (175-179')		08/22/2009	10:20			08/25/2009
15 -	__	Water	TS2-02 (165-169')		08/22/2009	10:40			08/25/2009
16 -	__	Water	TS2-02 (155-159)		08/22/2009	11:25			08/25/2009
17 -	__	Water	TS2-02 (147-151)		08/22/2009	12:10			08/25/2009
23 -	__	Water	TS1-05 at 200		08/19/2009	15:48	08/19/2009	16:13	08/21/2009
24 -	__	Water	TS3-02 (184-188' bgs)		08/20/2009	17:45			08/25/2009
25 -	__	Water	TS3-02 (164-168' bgs)		08/21/2009	10:05			08/25/2009
26 -	__	Water	TS3-02 (139-143)		08/21/2009	12:30			08/25/2009
27 -	__	Water	TS3-02 (129-133)		08/21/2009	12:45			08/25/2009
28 -	__	Water	TS3-02 (119-123' bgs)		08/21/2009	13:20			08/25/2009
28 -	FD	Water	TS3-02 (119-123' bgs)/Field Duplicate of sample 28		08/21/2009	13:20			08/25/2009
30 -	__	Water	Irrigation well East of Garvey Elevator		08/21/2009	15:50			08/25/2009
31 -	__	Water	TS2-05 (214-218' bgs)		08/23/2009	09:45			08/25/2009
32 -	__	Water	TS2-05 (204-208' bgs)		08/23/2009	10:15			08/25/2009
33 -	__	Water	TS2-05 (194-198' bgs)		08/23/2009	11:05			08/25/2009
34 -	__	Water	TS2-05 (184-188)		08/23/2009	11:45			08/25/2009
35 -	__	Water	TS2-05 (174-178' bgs)		08/23/2009	14:30			08/25/2009
36 -	__	Water	TS2-05 (164-168')		08/23/2009	15:20			08/25/2009
37 -	__	Water	TS2-05 (151-155' bgs)		08/23/2009	16:00			08/25/2009
38 -	__	Water	TS2-05 (144-148' bgs)		08/23/2009	16:45			08/25/2009
39 -	__	Water	TS2-05 (134-138' bgs)		08/23/2009	17:20			08/25/2009
40 -	__	Water	TS2-01 (208-212' bgs)		08/24/2009	15:30			08/25/2009
41 -	__	Water	TS2-01 (198-202' bgs)		08/24/2009	16:00			08/25/2009
42 -	__	Water	TS2-01 (188-192' bgs)		08/24/2009	16:45			08/25/2009
43 -	__	Water	TS2-01 (178-182' bgs)		08/24/2009	17:15			08/25/2009
44 -	__	Water	TS2-01 (168-172' bgs)		08/25/2009	08:30			08/26/2009
45 -	__	Water	TS2-01 (158-162' bgs)		08/25/2009	09:30			08/26/2009
46 -	__	Water	TS2-01 (148-152' bgs)		08/25/2009	11:00			08/26/2009
46 -	FD	Water	TS2-01 (148-152' bgs)/Field Duplicate of sample 46		08/25/2009	11:00			08/26/2009

Project ID: BZA72Z02 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
48 -	FB	Water	EDB/LDL VOA Trip Blank sample		08/18/2009	14:39			08/21/2009
49 -	FB	Water	LDL VOA Trip Blank sample 2		08/22/2009	14:35			08/25/2009

Analysis Comments About Results For This Analysis

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__	10-__	11-__	11-FD	13-__	14-__
	15-__	16-__	17-__	26-__	27-__	28-__	28-FD
	31-__	32-__	33-__	34-__	35-__	36-__	37-__
	38-__	39-__	40-__	41-__	42-__	43-__	44-__
	45-__	46-__	46-FD				

Comments:
(N/A)

1 EDB and DBCP in Drinking Water by GC/ECD

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3240.4E

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__	10-__	11-__	11-FD	13-__	14-__
	15-__	16-__	17-__	23-__	24-__	25-__	26-__
	27-__	28-__	28-FD	30-__	31-__	32-__	33-__
	34-__	35-__	36-__	37-__	38-__	39-__	40-__
	41-__	42-__	43-__	44-__	45-__	46-__	46-FD
	48-FB						

Comments:

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__	10-__	11-__	11-FD	13-__	14-__
	15-__	16-__	17-__	26-__	27-__	28-__	28-FD
	31-__	32-__	33-__	34-__	35-__	36-__	37-__
	38-__	39-__	40-__	41-__	42-__	43-__	44-__
	45-__	46-__	46-FD				

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Analysis Comments About Results For This Analysis

Samples:

1-__	2-__	3-__	4-__	5-__	6-__	6-FD
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	26-__	27-__	28-__	28-FD
31-__	32-__	33-__	34-__	35-__	36-__	37-__
38-__	39-__	40-__	41-__	42-__	43-__	44-__
45-__	46-__	46-FD				

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:

1-__	2-__	3-__	4-__	5-__	6-__	6-FD
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	26-__	27-__	28-__	28-FD
31-__	32-__	33-__	34-__	35-__	36-__	37-__
38-__	39-__	40-__	41-__	42-__	43-__	44-__
45-__	46-__	46-FD				

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:

1-__	2-__	3-__	4-__	5-__	6-__	6-FD
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	26-__	27-__	28-__	28-FD
31-__	32-__	33-__	34-__	35-__	36-__	37-__
38-__	39-__	40-__	41-__	42-__	43-__	44-__
45-__	46-__	46-FD				

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3230.13D

Samples:

1-__	2-__	3-__	4-__	5-__	6-__	6-FD
8-__	9-__	10-__	11-__	11-FD	13-__	14-__
15-__	16-__	17-__	23-__	24-__	25-__	26-__
27-__	28-__	28-FD	30-__	31-__	32-__	33-__
34-__	35-__	36-__	37-__	38-__	39-__	40-__

Analysis	Comments About Results For This Analysis

Samples: 41-__ 42-__ 43-__ 44-__ 45-__ 46-__ 46-FD
48-FB 49-FB

Comments:

There was not sufficient sample volume to perform the required number of Matrix Spike and Spike duplicate analyses.

Samples 23 and 24 required dilutions for Acetone. Sample 32 required dilution for Carbon Tetrachloride.

Sample 25 required a 2x dilution to allow analysis due to high amount of sediment, and limited volume of sample. Reporting limits were raised accordingly. Acetone was J-coded for this sample, as the value was beyond the calibration range, and is an estimate.

Samples: 9, 15-17, 24, 34, 35, 36, 38, 39 and 42 had a bubble larger than a pea in the vial. Samples were determined to be improperly preserved. All positive results were reported with a J-code indicating that they are estimated values. All non-detects were UJ-coded, as the actual reporting limit may be higher than the reported value.

Trichloromethane was UJ-coded in samples 1-6, 6FD, 8-11, 11FD, 13-17, 23-28, 28FD, 30-46, 46FD, 48FB and 49FB. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for this analyte may be higher than the reported value.

2-Hexanone was J-coded in sample 24. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentration for this analyte may be higher than the reported value.

Acetone was J-coded in samples 6FD, 8-11, 11FD, 13-17, 24, 25, 35, and 36. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications, and low recovery for the Matrix spike and spike duplicate (36 only). The actual concentration for this analyte may be lower than the reported value.

Bromoform was UJ-coded in samples 6, 36-46, 46FD, and 49FB. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for this analyte may be higher than the reported value.

Toluene was UJ-coded in samples 1-6, 6FD, 8, 10, 11, 11FD, 13-17, 23, 25-28, 28FD, 30, 32, 34, 37-46, 46FD and 49FB. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of this analyte in the laboratory control sample and poor precision in the matrix spike and spike duplicate (36 only). The actual reporting limit for this analyte may be higher than the reported value.

Analysis	Comments About Results For This Analysis

Toluene was J-coded in samples 9, 24, 31, 33, 35, 36 and 49FB. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to low recovery of this analyte in the laboratory control sample as well as low recovery in the matrix spike ans spike duplicate (36 only). The actual concentration for this analyte may be higher than the reported value.

Carbon Disulfide, Benzene and 1,1,2,2-Tetrachloroethane were UJ-coded in samples 6FD, 8-11, 11FD, 13-17, 24-28, 28FD and 30-35. These analytes were not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of these analytes in the laboratory control sample. The actual reporting limit for these analytes may be higher than the reported value.

Chloroform was UJ-coded in sample 36. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery obtained for this analyte in the laboratory matrix spike and matrix spike duplicate, as well as for the air bubble in the sample. The actual reporting limit for this analyte may be higher than the reported value.

Vinyl Chloride was UJ-coded in sample 36. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate, as well as for the air bubble in the sample. The actual reporting limit for this analyte may be higher than the reported value.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	987	854	752	784
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.37	7.16	8.36	8.10
1 Temperature of Water by Field Measurement					
Temperature	Deg C	22.28	22.87	28.18	28.60
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.49	1.71	0.38	1.65
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	22	15	34	12
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	555	658	658	482
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	8.17	7.63	7.63	7.88
1 Temperature of Water by Field Measurement					
Temperature	Deg C	23.08	16.61	16.16	17.74
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.44	5.85	5.85	1.71
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	9.7	13	12 J	8.9 J
Benzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	9-__	10-__	11-__	11-FD
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	450	485	549	549
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.69	7.02	7.17	7.17
1 Temperature of Water by Field Measurement					
Temperature	Deg C	14.42	15.92	19.52	19.52
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.35	4.73	1.21	1.21
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	7.2 J	8.4 J	7.1 J	6.4 J
Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromodichloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	6.7 J	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon Tetrachloride	ug/L	1.0 UJ	3.8	2.4	2.0
Chlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 UJ	1.0 U	2.3	2.5
Chloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 UJ	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	9-__	10-__	11-__	11-FD
Methylcyclohexane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 UJ	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Tetrachloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Toluene	ug/L	2.3 J	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	559	537	504	507
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.02	7.04	7.12	7.09
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.93	19.97	21.41	26.13
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.32	0.35	0.19	0.45
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	9.3 J	7.5 J	7.1 J	7.0 J
Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Bromoform	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Bromomethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Carbon Disulfide	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon Tetrachloride	ug/L	3.2	13	1.4 J	1.0 UJ
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Chloroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Chloroform	ug/L	4.3	12	12 J	5.9 J
Chloromethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
2-Hexanone	ug/L	2.0 U	2.0 U	2.0 UJ	2.0 UJ
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
4-Methyl-2-Pentanone	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Naphthalene	ug/L	2.0 U	2.0 U	2.0 UJ	2.0 UJ
Styrene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Toluene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
m and/or p-Xylene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ
o-Xylene	ug/L	1.0 U	1.0 U	1.0 UJ	1.0 UJ

Analysis/ Analyte	Units	17-__	23-__	24-__	25-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	537			
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.11			
1 Temperature of Water by Field Measurement					
Temperature	Deg C	24.96			
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.15			
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000			
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	8.2 J	110	81 J	91 J
Benzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 UJ
Bromodichloromethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Bromoform	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Bromomethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
2-Butanone	ug/L	5.0 UJ	8.3	33 J	25
Carbon Disulfide	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 UJ
Carbon Tetrachloride	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Chlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Chloroethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Chloroform	ug/L	2.9 J	1.1	1.0 UJ	2.0 U
Chloromethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Cyclohexane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 U	5.0 UJ	10 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,2-Dibromoethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,2-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,3-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,4-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,1-Dichloroethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,2-Dichloroethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,1-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
cis-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
trans-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,2-Dichloropropane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
cis-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
trans-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Ethyl Benzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
2-Hexanone	ug/L	2.0 UJ	2.0 U	4.4 J	4.0 U
Isopropylbenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Methyl Acetate	ug/L	5.0 UJ	5.0 U	5.0 UJ	10 U
Methyl tert-butyl ether	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U

Analysis/ Analyte	Units	17-__	23-__	24-__	25-__
Methylcyclohexane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Methylene Chloride	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
4-Methyl-2-Pentanone	ug/L	1.0 UJ	1.0 U	4.8 J	2.7
Naphthalene	ug/L	2.0 UJ	2.0 U	2.0 UJ	4.0 U
Styrene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 U	5.0 UJ	10 UJ
Tetrachloroethene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	2.5 J	2.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,1,1-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Trichloroethene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	2.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
Vinyl Chloride	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
m and/or p-Xylene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U
o-Xylene	ug/L	1.0 UJ	1.0 U	1.0 UJ	2.0 U

Analysis/ Analyte	Units	26-__	27-__	28-__	28-FD
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	877	778	853	853
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	N/A	7.18	7.12	7.12
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.23	16.63	16.86	16.86
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	3.60	10.91	2.26	2.26
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	26-__	27-__	28-__	28-FD
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	30-__	31-__	32-__	33-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		248	281	362
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU		8.00	7.55	7.27
1 Temperature of Water by Field Measurement					
Temperature	Deg C		20.86	17.96	21.24
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L		7.16	2.37	3.35
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon Tetrachloride	ug/L	12	12	41	12
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	22	3.5	4.8
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	30-__	31-__	32-__	33-__
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	2.0 J	1.0 UJ	1.2 J
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	34-__	35-__	36-__	37-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	407	472	414	704
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.76	7.68	7.53	7.31
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.69	28.0	21.86	25.39
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.58	0.04	0.04	1.08
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 UJ	18 J	7.8 J	5.0 U
Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Bromodichloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
2-Butanone	ug/L	5.0 UJ	6.7 J	5.0 UJ	5.0 U
Carbon Disulfide	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Carbon Tetrachloride	ug/L	3.5 J	1.0 UJ	1.0 UJ	1.0 U
Chlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Chloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Chloroform	ug/L	6.9 J	7.7 J	8.2 J	1.8
Chloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Cyclohexane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,2-Dibromoethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,1-Dichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,2-Dichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,1-Dichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,2-Dichloropropane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Ethyl Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
2-Hexanone	ug/L	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U
Isopropylbenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Methyl Acetate	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U
Methyl tert-butyl ether	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U

Analysis/ Analyte	Units	34-__	35-__	36-__	37-__
Methylcyclohexane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Methylene Chloride	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Naphthalene	ug/L	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U
Styrene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U
Tetrachloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Toluene	ug/L	1.0 UJ	4.3 J	2.1 J	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Trichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
Vinyl Chloride	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
m and/or p-Xylene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U
o-Xylene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U

Analysis/ Analyte	Units	38-__	39-__	40-__	41-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	793	853	573	303
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.34	7.18	7.32	7.4
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.15	19.16	28.03	23.22
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	3.43	0.17	0.32	0.16
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 UJ	5.0 UJ	5.0 U	5.0 U
Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
2-Butanone	ug/L	5.0 UJ	5.0 UJ	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Chloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Chloroform	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Chloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 UJ	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 UJ	2.0 UJ	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 UJ	5.0 UJ	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U

Analysis/ Analyte	Units	38-__	39-__	40-__	41-__
Methylcyclohexane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Naphthalene	ug/L	2.0 UJ	2.0 UJ	2.0 U	2.0 U
Styrene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 UJ	5.0 U	5.0 U
Tetrachloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U
o-Xylene	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 U

Analysis/ Analyte	Units	42-__	43-__	44-__	45-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	395	436	727	738
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.08	7.08	6.86	6.96
1 Temperature of Water by Field Measurement					
Temperature	Deg C	20.97	21.19	17.09	17.24
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.56	1.26	3.73	2.23
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999	>999	>999
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 UJ	1.1	2.6	2.9
1,2-Dichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.5
trans-1,2-Dichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 UJ	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	42-__	43-__	44-__	45-__
Methylcyclohexane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 UJ	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 UJ	5.0 U	5.0 U	5.0 U
Tetrachloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,2,3-Trichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 UJ	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	46-__	46-FD	48-FB	49-FB
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	760	760		
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	
1 pH of Water by Field Measurement					
pH	SU	6.91	6.91		
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.17	19.17		
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.30	2.30		
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>999	>999		
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 UJ	1.0 UJ	1.0 U	1.0 UJ
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	2.3	2.4	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.2	1.2	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	46-__	46-FD	48-FB	49-FB
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 UJ	1.0 UJ	1.2 J	1.7 J
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	1.0 U	1.0 U	1.5	3.5
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4523

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ____________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 10/05/2009

Subject: Transmittal of Sample Analysis Results for ASR #: 4525

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101

Project ID: BZA72Z01

Project Desc: Garvey Elevator - RI/FS sampling

Location: Hastings State: Nebraska Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

GPRA PRC: 302DD2C

Purpose: Site Characterization

This ASR is for OU01 sediment/surface water ampling.
Additional field sampler: Alan Rittgers, HGL (913-317-8860).

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FD = Field Duplicate

Units: Specific units in which results are reported.

% = Percent
ug/kg = Micrograms per Kilogram

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Solid	SD-03		08/19/2009	09:45			08/20/2009
2 -	__	Solid	SD-06		08/19/2009	10:25			08/20/2009
3 -	__	Solid	SD-08		08/19/2009	11:05			08/20/2009
3 -	FD	Solid	SD-08/Field Duplicate of sample 3		08/19/2009	11:05			08/20/2009
5 -	__	Solid	SD-09		08/19/2009	12:30			08/20/2009
6 -	__	Solid	SD-10		08/19/2009	13:00			08/20/2009
7 -	__	Solid	SD-11		08/19/2009	13:15			08/20/2009
8 -	__	Solid	SD-04		08/19/2009	14:05			08/20/2009
9 -	__	Solid	SD-05		08/19/2009	14:30			08/20/2009
10 -	__	Solid	SD-01		08/19/2009	15:00			08/20/2009
11 -	__	Solid	SD-01		08/19/2009	15:15			08/20/2009

Analysis Comments About Results For This Analysis

1 Herbicides in Soil by GC/EC

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3240.6C

Basis: Dry

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__			

Comments:

1 Percent Solid

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3142.9E

Basis: N/A

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__			

Comments:
(N/A)

1 Pesticides in Soil by GC/EC

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3240.2G

Basis: Dry

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__			

Comments:
Sample 4525-1 was spiked with malathion for QC samples 4525-1MS and 4525-1MSD. Samples 4525-1MS and 4525-1MSD were analyzed for chlorinated pesticides concurrently with malathion analysis. Samples 4525-1 and 4525-1MS were non-detect for the chlorinated pesticides. Sample 4525-1MSD showed unconfirmed positive results for dieldrin (0.79 ug/kg), p,p'-DDE (6.1 ug/kg), p,p'-DDD (6.7 ug/kg), p,p-DDT (63 ug/kg) and technical chlordane (14 ug/kg). To verify the presence of these analytes, a new sample preparation batch was performed with a method blank, laboratory control sample (spiked with technical chlordane), 4525-1, 4525-1MS and 4525-1MSD (matrix spikes with technical chlordane). Analysis of the new extractions (data not reported) indicated that sample 4525-1 did not contain any analytes previously found in the initial analysis of 4525-1MSD. The source of contamination in sample 4525-1MSD was unknown.

All soil samples were reported on a dry weight basis. Reporting limits were slightly higher than TRL due to correction for moisture content and sample dilution for analytes reported from the second analytical run (9/08/09).

Analysis	Comments About Results For This Analysis

Continuing Calibration:

p,p'-DDT and methoxychlor were UJ-coded in samples 4525-1 and 4525-2. These analytes were not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check (p,p'-DDT recovery front column -42%, middle column -43%, criteria +/-15% and methoxychlor recovery front column -41%, middle column -42%) not meeting accuracy specifications for CCAL12-PESTA. The actual reporting limit for these analytes may be higher than the reported value. P,p'-DDT and methoxychlor for associated sample 4525-7 was reported from 9/08/09 analytical run.

Endrin ketone was UJ-coded in sample 4525-2. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check on CC13-SPESTB not meeting accuracy specifications (endrin ketone -19% difference front column, -18% difference middle column, criteria +/- 15% difference). The actual reporting limit for this analyte may be higher than the reported value.

Methoxychlor was UJ-coded in samples 4525-3, 4525-3FD, 4525-8, 4525-9, 4525-10, 4525-5, 4525-6 and, 4525-11. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check (methoxychlor recovery front column -69%, middle column -68%, criteria +/- 15%) not meeting accuracy specifications for CCAL16-PESTA.5. The actual reporting limit for this analyte may be higher than the reported value.

p,p'-DDT was UJ-coded in samples 4525-3, 4525-3FD, 4525-8, 4525-9, 4525-10, 4525-5, and, 4525-11. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check (p,p'-DDT recovery front column -67%, middle column -69%, criteria +/-15%) not meeting accuracy specifications for CCAL16-PESTA.5. The actual reporting limit for this analyte may be higher than the reported value.

p,p'-DDT was J-coded in sample 4525-6. This analyte was not found in the samples at or above the reporting limit, however, the quantitation is an estimate (J-coded) due to the continuing calibration check (p,p'-DDT recovery front column -67%, middle column -69%, criteria +/-15%) not meeting accuracy specifications for CCAL16-PESTA.5. The actual reporting limit for this analyte may be higher than the reported value.

Heptachlor and endrin were UJ-coded in sample 4525-2. These analytes were not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check on CC16-SPESTA.5 not meeting accuracy specifications (heptachlor -20% difference front column, -22% difference middle column, criteria +/- 15% difference and endrin front column -18% difference, middle column -22% difference, criteria +/- 15% difference). The actual reporting limit for these analytes may be higher than the reported value.

Technical chlordane was J-coded in sample 4525-6. This analyte was not found in the samples at or above the reporting limit, however, the quantitation is an estimate (J-coded) due to the continuing calibration check (average chlordane front -16% difference, average

Analysis	Comments About Results For This Analysis

chlordane middle -16% difference, criteria +/- 15% difference) not meeting accuracy specifications for CC20-STC. The actual reporting limit for this analyte may be higher than the reported value.

Methoxychlor was UJ-coded in samples 4525-5, 4525-6 and, 4525-11. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check (methoxychlor recovery front column -75%, middle column -75%, criteria +/- 15%) not meeting accuracy specifications for CCAL21-PESTA. The actual reporting limit for this analyte may be higher than the reported value.

p,p'-DDT was UJ-coded in samples 4525-5, and 4525-11. This analyte was not found in the samples at or above the reporting limit, however, the quantitation is an estimate (UJ-coded) due to the continuing calibration check (p,p-DDT recovery front column -74%, middle column -74%, criteria +/-15%) not meeting accuracy specifications for CCAL21-PESTA. The actual reporting limits for this analyte may be higher than the reported value.

p,p'-DDT was J-coded in sample 4525-6. Although this analyte has been positively identified in the sample, the quantitation is an estimate (J-coded) due to the continuing calibration check (p,p-DDT recovery front column -74%, middle column -74%, criteria +/- 15%) not meeting accuracy specifications for CCAL21-PESTA. The actual concentration for this analyte may be higher than the reported value.

MS/MSD Precision:
Endrin ketone was UJ-coded in sample 4525-7. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to poor precision (endrin ketone 35% difference, PCL 34%) obtained for this analyte in the laboratory matrix spike and matrix spike duplicate. The actual reporting limit for this analyte may be higher than the reported value.

MSD Recovery:
Endosulfan II and endrin aldehyde were UJ-coded in sample 4525-7. These analytes were not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery (endosulfan II - 80% recovery, criteria 93% - 123%, endrin aldehyde - 66% recovery, criteria 67% - 141%) of these analytes in the laboratory matrix spike duplicate. The actual reporting limits for these analytes may be higher than the reported value.

Breakdown Analytical Run 9/1/09:
p,p'-DDT was UJ-coded in samples 4525-1, 4525-2, 4525-3, 4525-3FD, 4525-5, 4525-8, 4525-9, 4525-10 and 4525-11 because p,p'-DDT breakdown (front column 30%, middle column 31%, criteria 20%) was above criteria for BD-2. p,p'-DDE was J-coded on sample 4525-6 because of DDT breakdown for BD-2. Endrin breakdown met criteria.

p,p'-DDT and p,p'-DDE were J-coded in sample 4525-6 because p,p'-DDT breakdown (front column 30%, middle column 31%, criteria 20%) was above criteria for BD-2. The actual result value for p,p'-DDT may be higher than the reported value. The actual result value for p,p'-DDE may be lower than the reported value.

Analysis	Comments About Results For This Analysis

p,p'-DDT was UJ-coded in samples 4525-3, 4525-FD, 4525-5, 4525-8, 4525-9, 4525-10 and 4525-11 because p,p'-DDT breakdown (front column 46%, middle column 46%, criteria 20%) for BD-3. Endrin breakdown met criteria.

p,p'-DDT and p,p'-DDE were J-coded in sample 4525-6 because p,p'-DDT breakdown (front column 46%, middle column 46%, criteria 20%) for BD-3. The actual result value for p,p'-DDT may be higher than the reported value. The actual result value for p,p'-DDE may be lower than the reported value.

1 Semi-Volatile Organic Compounds in Soil

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.2F

Basis: Dry

Samples: 1-__ 2-__ 3-__ 3-FD 5-__ 6-__ 7-__
8-__ 9-__ 10-__ 11-__

Comments:

Reporting limits for samples 4525-1, 4525-5, 4525-6, 4525-7, and 4525-8 were higher than typical reporting limits for this method. Due to the samples' appearances GPC clean-up was needed. Reporting limits were further adjusted as all samples were reported on a dry basis.

4-Chloroaniline (68%, 80 - 120%) was UJ-coded in samples 4525-1, 4525-2, 4525-3, 4525-3-FD, 4525-5, 4525-6, 4525-7, 4525-8, 4525-9, 4525-10, and 4525-11. The analyte was not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the initial calibration verification standard not meeting accuracy specifications. The actual reporting limit for this analyte may be higher than the reported value.

4,6-Dinitro-2-methylphenol (61%, 70 - 130%) was UJ-coded in samples 4525-1, 4525-2, 4525-3, 4525-3-FD, 4525-5, 4525-6, 4525-7, 4525-8, 4525-9, 4525-10, and 4525-11. The analyte was not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the initial calibration verification standard not meeting linear regression back calculation accuracy specifications. The actual reporting limit for this analyte may be higher than the reported value.

The %RSD exceeded the ±20% limits for bis(2-Chloroisopropyl)ether (28.8%), N-nitroso-di-n-propylamine (25.0%), Hexachlorocyclopentadiene (22.3%), Pentachlorophenol (32.3%), Di-n-octylphthalate (-20.3%) , Benzo(g,h,i)perylene (24.0%), Benzoic acid (40.2%), 2,4-Dinitrophenol (45.9%), and 4,6-Dinitro-2-methylphenol (60.2%) and were UJ-coded in samples 4525-2, 4525-3, 4525-3-FD, 4525-9, and 4525-11. These analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for the analyte may be higher than the reported value.

bis(2-Chloroisopropyl)ether, N-nitroso-di-n-propylamine, Hexachlorocyclopentadiene,

Analysis	Comments About Results For This Analysis

Pentachlorophenol, Benzo(g,h,i)perylene, 2,4-Dinitrophenol, and 4,6-Dinitro-2-methylphenol were biased low and were UJ-coded in sample 4525-10. These analytes were not found in the sample at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for the analyte may be higher than the reported value.

Benzoic acid was J-coded in sample 4525-10. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentrations may be higher than the reported value.

The %RSD exceeded the ±20% limits for bis(2-Chloroisopropyl)ether (22.1%), N-nitroso-di-n-propylamine (23.2%), Hexachlorobutadiene (23.0%), N-nitrosodiphenylamine (-23.2%), Pentachlorophenol (23.4%), Di-n-butylphthalate (-25.0%), Butylbenzylphthalate (-23.6%), bis(2-Ethylhexyl)phthalate (-24.2%), Di-n-octylphthalate (-25.1%), 2,4-Dinitrophenol (39.7%), and 4,6-Dinitro-2-methylphenol (51.2%) and were UJ-coded in samples 4525-1, 4525-5, 4525-6, 4525-7, and 4525-8. These analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for the analyte may be higher than the reported value.

Bis(2-Chloroisopropyl)ether (34%, 36 - 106%), N-nitroso-di-n-propylamine (38%, 46 - 109%), 1,2,4-Trichlorobenzene (41%, 45 - 109%), Hexachlorobutadiene (38%, 48 - 112%), 4-Chlorophenyl-phenylether (57%, 58 - 125%), Hexachlorobenzene (65%, 71 - 122%), and Pentachlorophenol (38%, 41 - 136%) were biased low and UJ-coded in samples 4525-2, 4525-3, 4525-3-FD, 4525-9, 4525-10, and 4525-11. These analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to low recovery of these analytes in the laboratory control sample. The actual reporting limit for these analytes may be higher than the reported value.

Phenol (46%, 53 - 105%), bis(2-Chloroethyl)ether (39%, 42 - 118%), 2-Chlorophenol (46%, 51 - 114%), 2-Methylphenol (48%, 53 - 114%), bis(2-Chloroisopropyl)ether (28%, 36 - 106%), 4-Methylphenol (50%, 52 - 115%), N-nitroso-di-n-propylamine (30%, 46 - 109%), Nitrobenzene (30%, 33 - 109%), Isophorone (41%, 42 - 109%), 2-Nitrophenol (40%, 43 - 116%), 2,4-Dichlorophenol (42%, 50 - 121%), 1,2,4-Trichlorobenzene (31%, 45 - 109%), Naphthalene (39%, 40 - 118%), Hexachlorobutadiene (26%, 48 - 112%), 4-Chloro-3-methylphenol (48%, 54 - 123%), 2-Methylnaphthalene (42%, 45 - 122%), 2,4,6-Trichlorophenol (48%, 55 - 118%), 2,4,5-Trichlorophenol (55%, 60 - 125%), 2-Chloronaphthalene (47%, 51 - 115%), 2,6-Dinitrotoluene (59%, 60 - 126%), 4-Chlorophenyl-phenylether (52%, 58 - 125%), 4-Bromophenyl-phenylether (64%, 67 - 126%), and Hexachlorobenzene (64%, 71 - 122%) were biased low and were UJ-coded in samples 4525-1, 4525-5, 4525-6, 4525-7, and 4525-8. These analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to low recovery of these analytes in the laboratory control sample. The actual reporting limit for these analytes may be higher than the reported value.

Hexachlorocyclopentadiene (8%, 10 - 119%) was biased low in the laboratory matrix spike

Analysis	Comments About Results For This Analysis

and was UJ-coded in sample 4525-11. This analyte was not found in the sample at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to low recovery of the analyte in the laboratory matrix spike. The actual reporting limit for this analyte may be higher than the reported value.

2-Fluorophenol (14%, 25 - 109%), Phenol-d6 (16%, 36 - 119%), Nitrobenzene-d5 (10%, 23 - 96%), 2-Fluorbiphenyl (16%, 25 - 107%), 2,4,6-Tribromophenol (21%, 32 - 141%), Terphenyl-d14 (26%, 30 - 126%) were low for sample 4525-1. Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Benzoic acid, Benzyl alcohol, bis(2-Chloroethoxy)methane, bis(2-Chloroethyl)ether, bis(2-Chloroispropyl)ether, bis(2-Ethylhexyl)phthalate, 4-Bromophenyl-phenylether, Butylbenzylphthalate, Carbazole, 4-Chloro-3-methylphenol, 4-Chloroaniline, 2-Chloronaphthalene, 2-Chlorophenol, 4-Chlorophenyl-phenylether, Chrysene, Di-n-butylphthalate, Di-n-octylphthalate, Dibenz(a,h)anthracene, Dibenzofuran, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 3,3'-Dichlorobenzidine, 2,4-Dichlorophenol, Diethylphthalate, Dimethylphenol, Dimethylphthalate, 4,6-Dinitro-2-methylphenol, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Hexachlorethane, Indeno(1,2,3-cd)pyrene, Isophorone, 2-Methylnaphthalene, 2-Methylphenol, 4-Methylphenol, Naphthalene, 2-Nitroaniline, 3-Nitroaniline, 4-Nitroaniline, Nitrobe nzene, 2-Nitrophenol, 4-Nitrophenol, N-nitroso-di-n-propylamine, N-nitrosodiphenylamine, Pentachlorophenol, Phenanthrene, Phenol, Pyrene, 1,2,4-Trichlorobenzene, 2,4,5-Trichlorophenol, and 2,4,6-Trichlorophenol were UJ-coded in sample 4525-1. These analytes were not found in the sample at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the low surrogate recoveries in the sample. The actual reporting limit for these analytes may be higher than the reported value.

bis(2-Chloroethyl)ether (66%), 1,3-Dichlorobenzene (64%), 1,4-Dichlorobenzene (65%), 1,2-Dichlorobenzene (60%), Benzyl alcohol (64%), bis(2-Chloroisopropyl)ether (47%), Hexachloroethane (59%), N-nitroso-di-n-propylamine (51%), Nitrobenzene (59%), 1,2,4-Trichlorobenzene (54%), Naphthalene (64%), 4-Chloroaniline (65%), Hexachlorobutadiene (48%), 2-Methylnaphthalene (64%), Hexachlorocyclopentadiene (63%), 2,4-Dinitrophenol (67%), 4-Chlorophenyl-phenylether (64%), 4,6-Dinitro-2-methylphenol (69%), and Benzo(g,h,i)perylene (58%) were biased low in the GPC Check sample (70 - 130%) and UJ-coded in samples 4525-1, 4525-5, 4525-6, 4525-7, and 4525-8. These analytes were not found in the samples at or above the reporting limit however, the reporting limit is an estimate (UJ-coded) due to the low recoveries in the GPC Check. The actual reporting limit for these analytes may be higher than the reported value.

1 UAA Pesticides in Soil by GC/EC

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3240.2G

Basis: Dry

Samples:							
	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__			

Comments:

Analysis	Comments About Results For This Analysis

1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3230.16D

Basis: Dry

Samples:	1-__	2-__	3-__	3-FD	5-__	6-__	7-__
	8-__	9-__	10-__	11-__			

Comments:

Reporting Limits: The reporting limits were raised for all samples due to the weight and percent solids.

Dichlorodifluoromethane was UJ-coded in samples 1, 2, 3, 3-FD, 5, 6, 7, 8, 9, 10, and 11. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration curve not meeting linearity specifications. The actual reporting limit may be higher than the reported value.

Acetone (+20.3%) was UJ-coded in sample 8. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limit for this analyte may be higher than the reported value.

Acetone (20.3%) was J-coded in samples 7,1, 2, 3, 3-FD, 5, 6, 9, 10, and 11. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the continuing calibration check not meeting accuracy specifications. The actual concentration for this analyte may be higher than the reported value.

1,2,3-Trichlorobenzene (50RPD, 39PCL) and 1,2,4-Trichlorobenzene (42RPD, 37PCL) were UJ-coded in sample 7. These analytes were not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for these analytes in the laboratory matrix spike and matrix spike duplicate. The actual reporting limit for these analytes may be higher than the reported value.

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	10 U	10 U	10 U	10 U
2,4,5-TP	ug/kg	10 U	10 U	10 U	10 U
2,4-D	ug/kg	20 U	20 U	20 U	20 U
1 Percent Solid					
Solids, percent	%	80.9	86.8	90.0	90.1
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	0.73 U	0.65 U	0.64 U	0.66 U
Aroclor 1016	ug/kg	24 U	22 U	21 U	22 U
Aroclor 1221	ug/kg	24 U	22 U	21 U	22 U
Aroclor 1232	ug/kg	24 U	22 U	21 U	22 U
Aroclor 1242	ug/kg	24 U	22 U	21 U	22 U
Aroclor 1248	ug/kg	24 U	22 U	21 U	22 U
Aroclor 1254	ug/kg	12 U	11 U	11 U	11 U
Aroclor 1260	ug/kg	61 U	54 U	53 U	55 U
A-BHC	ug/kg	0.37 U	0.33 U	0.32 U	0.33 U
B-BHC	ug/kg	1.2 U	1.1 U	1.1 U	1.1 U
D-BHC	ug/kg	0.49 U	0.44 U	0.42 U	0.44 U
G-BHC	ug/kg	0.49 U	0.44 U	0.42 U	0.44 U
Chlordane, technical	ug/kg	4.9 U	4.4 U	21 U	22 U
p,p'-DDD	ug/kg	0.98 U	0.87 U	0.85 U	0.88 U
p,p'-DDE	ug/kg	1.2 U	1.1 U	1.1 U	1.1 U
p,p'-DDT	ug/kg	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ
Dieldrin	ug/kg	0.73 U	0.65 U	0.64 U	0.66 U
Endosulfan I	ug/kg	0.73 U	0.65 U	0.64 U	0.66 U
Endosulfan II	ug/kg	0.98 U	0.87 U	0.85 U	0.88 U
Endosulfan Sulfate	ug/kg	0.98 U	0.87 U	4.2 U	4.4 U
Endrin	ug/kg	0.98 U	0.87 UJ	4.2 U	4.4 U
Endrin Aldehyde	ug/kg	1.2 U	1.1 U	5.3 U	5.5 U
Endrin Ketone	ug/kg	4.9 U	0.87 UJ	4.2 U	4.4 U
Heptachlor	ug/kg	0.73 U	0.65 UJ	3.2 U	3.3 U
Heptachlor Epoxide	ug/kg	0.73 U	0.65 U	3.2 U	0.66 U
p,p'-Methoxychlor	ug/kg	2.4 UJ	2.2 UJ	2.1 UJ	2.2 UJ
Toxaphene	ug/kg	120 U	110 U	110 U	110 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	200 UJ	90 U	87 U	89 U
Acenaphthylene	ug/kg	200 UJ	90 U	87 U	89 U
Anthracene	ug/kg	200 UJ	90 U	87 U	89 U
Benzo(a)anthracene	ug/kg	200 UJ	90 U	87 U	89 U
Benzo(a)pyrene	ug/kg	200 UJ	90 U	87 U	89 U
Benzo(b)fluoranthene	ug/kg	200 UJ	90 U	87 U	89 U
Benzo(g,h,i)perylene	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
Benzo(k)fluoranthene	ug/kg	200 UJ	90 U	87 U	89 U
Benzoic acid	ug/kg	990 UJ	450 UJ	440 UJ	440 UJ
Benzyl alcohol	ug/kg	490 UJ	230 U	220 U	220 U
bis(2-Chloroethoxy)methane	ug/kg	200 UJ	90 U	87 U	89 U

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
bis(2-Chloroethyl)ether	ug/kg	200 UJ	90 U	87 U	89 U
bis(2-Chloroisopropyl)ether	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
bis(2-Ethylhexyl)phthalate	ug/kg	490 UJ	230 U	220 U	220 U
4-Bromophenyl-phenylether	ug/kg	200 UJ	90 U	87 U	89 U
Butylbenzylphthalate	ug/kg	490 UJ	230 U	220 U	220 U
Carbazole	ug/kg	490 UJ	230 U	220 U	220 U
4-Chloro-3-methylphenol	ug/kg	490 UJ	230 U	220 U	220 U
4-Chloroaniline	ug/kg	990 UJ	450 UJ	440 UJ	440 UJ
2-Chloronaphthalene	ug/kg	200 UJ	90 U	87 U	89 U
2-Chlorophenol	ug/kg	490 UJ	230 U	220 U	220 U
4-Chlorophenyl-phenylether	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
Chrysene	ug/kg	200 UJ	90 U	87 U	89 U
Di-n-butylphthalate	ug/kg	490 UJ	230 U	220 U	220 U
Di-n-octylphthalate	ug/kg	490 UJ	230 U	220 U	220 U
Dibenz(a,h)anthracene	ug/kg	200 UJ	90 U	87 U	89 U
Dibenzofuran	ug/kg	200 UJ	90 U	87 U	89 U
1,2-Dichlorobenzene	ug/kg	200 UJ	90 U	87 U	89 U
1,3-Dichlorobenzene	ug/kg	200 UJ	90 U	87 U	89 U
1,4-Dichlorobenzene	ug/kg	200 UJ	90 U	87 U	89 U
3,3'-Dichlorobenzidine	ug/kg	990 UJ	450 U	440 U	440 U
2,4-Dichlorophenol	ug/kg	490 UJ	230 U	220 U	220 U
Diethylphthalate	ug/kg	200 UJ	90 U	87 U	89 U
2,4-Dimethylphenol	ug/kg	200 UJ	90 U	87 U	89 U
Dimethylphthalate	ug/kg	200 UJ	90 U	87 U	89 U
4,6-Dinitro-2-methylphenol	ug/kg	990 UJ	450 UJ	440 UJ	440 UJ
2,4-Dinitrophenol	ug/kg	990 UJ	450 UJ	440 UJ	440 UJ
2,4-Dinitrotoluene	ug/kg	200 UJ	90 U	87 U	89 U
2,6-Dinitrotoluene	ug/kg	200 UJ	90 U	87 U	89 U
Fluoranthene	ug/kg	200 UJ	90 U	87 U	89 U
Fluorene	ug/kg	200 UJ	90 U	87 U	89 U
Hexachlorobenzene	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
Hexachlorobutadiene	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
Hexachlorocyclopentadiene	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
Hexachloroethane	ug/kg	200 UJ	90 U	87 U	89 U
Indeno(1,2,3-cd)pyrene	ug/kg	200 UJ	90 U	87 U	89 U
Isophorone	ug/kg	200 UJ	90 U	87 U	89 U
2-Methylnaphthalene	ug/kg	200 UJ	90 U	87 U	89 U
2-Methylphenol	ug/kg	490 UJ	230 U	220 U	220 U
4-Methylphenol	ug/kg	490 UJ	230 U	220 U	220 U
Naphthalene	ug/kg	200 UJ	90 U	87 U	89 U
2-Nitroaniline	ug/kg	490 UJ	230 U	220 U	220 U
3-Nitroaniline	ug/kg	490 UJ	230 U	220 U	220 U
4-Nitroaniline	ug/kg	990 UJ	450 U	440 U	440 U
Nitrobenzene	ug/kg	200 UJ	90 U	87 U	89 U
2-Nitrophenol	ug/kg	490 UJ	230 U	220 U	220 U

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
4-Nitrophenol	ug/kg	990 UJ	450 U	440 U	440 U
N-nitroso-di-n-propylamine	ug/kg	490 UJ	230 UJ	220 UJ	220 UJ
N-nitrosodiphenylamine	ug/kg	200 UJ	90 U	87 U	89 U
Pentachlorophenol	ug/kg	490 UJ	230 UJ	220 UJ	220 UJ
Phenanthrene	ug/kg	200 UJ	90 U	87 U	89 U
Phenol	ug/kg	200 UJ	90 U	87 U	89 U
Pyrene	ug/kg	200 UJ	90 U	87 U	89 U
1,2,4-Trichlorobenzene	ug/kg	200 UJ	90 UJ	87 UJ	89 UJ
2,4,5-Trichlorophenol	ug/kg	490 UJ	230 U	220 U	220 U
2,4,6-Trichlorophenol	ug/kg	490 UJ	230 U	220 U	220 U
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	4.9 U	4.36 U	4.2 U	4.4 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	100 J	170 J	350 J	330 J
Benzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Bromodichloromethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Bromoform	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Bromomethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
2-Butanone	ug/kg	13	12	24	24
Carbon Disulfide	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Carbon Tetrachloride	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Chlorobenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Chloroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Chloroform	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Chloromethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Cyclohexane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,2-Dibromo-3-Chloropropane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Dibromochloromethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,2-Dibromoethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,2-Dichlorobenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,3-Dichlorobenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,4-Dichlorobenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Dichlorodifluoromethane	ug/kg	5.9 UJ	6.1 UJ	6.7 UJ	6.1 UJ
1,1-Dichloroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,2-Dichloroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,1-Dichloroethene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
cis-1,2-Dichloroethene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
trans-1,2-Dichloroethene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,2-Dichloropropane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
cis-1,3-Dichloropropene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
trans-1,3-Dichloropropene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Ethyl Benzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
2-Hexanone	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Isopropylbenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Methyl Acetate	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
Methyl tert-butyl ether	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Methylcyclohexane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Methylene Chloride	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
4-Methyl-2-Pentanone	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Naphthalene	ug/kg	12 U	12 U	13 U	12 U
Styrene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,1,2,2-Tetrachloroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Tetrachloroethene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Toluene	ug/kg	5.9 U	6.1 U	37	6.1 U
1,2,3-Trichlorobenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,2,4-Trichlorobenzene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,1,1-Trichloroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,1,2-Trichloroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Trichloroethene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Trichlorofluoromethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
1,1,2-Trichlorotrifluoroethane	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
Vinyl Chloride	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U
m and/or p-Xylene	ug/kg	12 U	12 U	13 U	12 U
o-Xylene	ug/kg	5.9 U	6.1 U	6.7 U	6.1 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
1 Herbicides in Soil by GC/EC					
2,4,5-T	ug/kg	10 U	10 U	10 U	10 U
2,4,5-TP	ug/kg	10 U	10 U	10 U	10 U
2,4-D	ug/kg	20 U	20 U	20 U	20 U
1 Percent Solid					
Solids, percent	%	83.1	84.9	85.6	81.9
1 Pesticides in Soil by GC/EC					
Aldrin	ug/kg	0.69 U	0.70 U	0.68 U	0.71 U
Aroclor 1016	ug/kg	23 U	23 U	23 U	24 U
Aroclor 1221	ug/kg	23 U	23 U	23 U	24 U
Aroclor 1232	ug/kg	23 U	23 U	23 U	24 U
Aroclor 1242	ug/kg	23 U	23 U	23 U	24 U
Aroclor 1248	ug/kg	23 U	23 U	23 U	24 U
Aroclor 1254	ug/kg	12 U	12 U	11 U	12 U
Aroclor 1260	ug/kg	58 U	120 U	57 U	59 U
A-BHC	ug/kg	0.35 U	0.35 U	0.34 U	0.35 U
B-BHC	ug/kg	1.2 U	1.2 U	1.1 U	1.2 U
D-BHC	ug/kg	0.46 U	0.47 U	0.45 U	0.47 U
G-BHC	ug/kg	0.46 U	0.47 U	0.45 U	0.47 U
Chlordane, technical	ug/kg	23 U	12 J	4.5 U	24 U
p,p'-DDD	ug/kg	0.92 U	0.94 U	0.91 U	0.94 U
p,p'-DDE	ug/kg	1.2 U	2.1 J	1.1 U	1.2 U
p,p'-DDT	ug/kg	1.2 UJ	2.1 J	5.7 U	1.2 UJ
Dieldrin	ug/kg	0.84	13	0.68 U	0.71 U
Endosulfan I	ug/kg	0.69 U	0.70 U	0.68 U	0.71 U
Endosulfan II	ug/kg	0.92 U	0.94 U	4.5 UJ	0.94 U
Endosulfan Sulfate	ug/kg	4.6 U	9.4 U	0.91 U	4.7 U
Endrin	ug/kg	4.6 U	9.4 U	0.91 U	4.7 U
Endrin Aldehyde	ug/kg	5.8 U	12 U	1.1 UJ	5.9 U
Endrin Ketone	ug/kg	4.6 U	9.4 U	0.91 UJ	4.7 U
Heptachlor	ug/kg	3.5 U	7.0 U	3.4 U	3.5 U
Heptachlor Epoxide	ug/kg	0.69 U	0.70 U	0.68 U	0.71 U
p,p'-Methoxychlor	ug/kg	2.3 UJ	2.3 UJ	11 U	2.4 UJ
Toxaphene	ug/kg	120 U	230 U	114 U	120 U
1 Semi-Volatile Organic Compounds in Soil					
Acenaphthene	ug/kg	380 U	190 U	190 U	190 U
Acenaphthylene	ug/kg	380 U	190 U	190 U	190 U
Anthracene	ug/kg	380 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/kg	380 U	190 U	190 U	190 U
Benzo(a)pyrene	ug/kg	380 U	230	190 U	190 U
Benzo(b)fluoranthene	ug/kg	380 U	230	190 U	190 U
Benzo(g,h,i)perylene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Benzo(k)fluoranthene	ug/kg	380 U	190 U	190 U	190 U
Benzoic acid	ug/kg	1900 U	940 U	930 U	970 U
Benzyl alcohol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
bis(2-Chloroethoxy)methane	ug/kg	380 U	190 U	190 U	190 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
bis(2-Chloroethyl)ether	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
bis(2-Chloroisopropyl)ether	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
bis(2-Ethylhexyl)phthalate	ug/kg	960 U	470 U	470 U	490 U
4-Bromophenyl-phenylether	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Butylbenzylphthalate	ug/kg	960 U	470 U	470 U	490 U
Carbazole	ug/kg	960 U	470 U	470 U	490 U
4-Chloro-3-methylphenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
4-Chloroaniline	ug/kg	1900 UJ	940 UJ	930 UJ	970 UJ
2-Chloronaphthalene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
2-Chlorophenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
4-Chlorophenyl-phenylether	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Chrysene	ug/kg	380 U	230	190 U	190 U
Di-n-butylphthalate	ug/kg	960 U	470 U	470 U	490 U
Di-n-octylphthalate	ug/kg	960 U	470 U	470 U	490 U
Dibenz(a,h)anthracene	ug/kg	380 U	190 U	190 U	190 U
Dibenzofuran	ug/kg	380 U	190 U	190 U	190 U
1,2-Dichlorobenzene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
1,3-Dichlorobenzene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
1,4-Dichlorobenzene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
3,3'-Dichlorobenzidine	ug/kg	1900 U	940 U	930 U	970 U
2,4-Dichlorophenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
Diethylphthalate	ug/kg	380 U	190 U	190 U	190 U
2,4-Dimethylphenol	ug/kg	380 U	190 U	190 U	190 U
Dimethylphthalate	ug/kg	380 U	190 U	190 U	190 U
4,6-Dinitro-2-methylphenol	ug/kg	1900 UJ	940 UJ	930 UJ	970 UJ
2,4-Dinitrophenol	ug/kg	1900 UJ	940 UJ	930 UJ	970 UJ
2,4-Dinitrotoluene	ug/kg	380 U	190 U	190 U	190 U
2,6-Dinitrotoluene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Fluoranthene	ug/kg	380 U	190 U	190 U	190 U
Fluorene	ug/kg	380 U	190 U	190 U	190 U
Hexachlorobenzene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Hexachlorobutadiene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Hexachlorocyclopentadiene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Hexachloroethane	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Indeno(1,2,3-cd)pyrene	ug/kg	380 U	190 U	190 U	190 U
Isophorone	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
2-Methylnaphthalene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
2-Methylphenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
4-Methylphenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
Naphthalene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
2-Nitroaniline	ug/kg	960 U	470 U	470 U	490 U
3-Nitroaniline	ug/kg	960 U	470 U	470 U	490 U
4-Nitroaniline	ug/kg	1900 U	940 U	930 U	970 U
Nitrobenzene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
2-Nitrophenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
4-Nitrophenol	ug/kg	1900 U	940 U	930 U	970 U
N-nitroso-di-n-propylamine	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
N-nitrosodiphenylamine	ug/kg	380 U	190 U	190 U	190 U
Pentachlorophenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
Phenanthrene	ug/kg	380 U	190 U	190 U	190 U
Phenol	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
Pyrene	ug/kg	380 U	190 U	190 U	190 U
1,2,4-Trichlorobenzene	ug/kg	380 UJ	190 UJ	190 UJ	190 UJ
2,4,5-Trichlorophenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
2,4,6-Trichlorophenol	ug/kg	960 UJ	470 UJ	470 UJ	490 UJ
1 UAA Pesticides in Soil by GC/EC					
Malathion	ug/kg	4.6 U	4.7 U	4.5 U	4.7 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	320 J	210 J	360 J	12 UJ
Benzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Bromodichloromethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Bromoform	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Bromomethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
2-Butanone	ug/kg	30	23	33	12 U
Carbon Disulfide	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Carbon Tetrachloride	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Chlorobenzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Chloroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Chloroform	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Chloromethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Cyclohexane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,2-Dibromo-3-Chloropropane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Dibromochloromethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,2-Dibromoethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,2-Dichlorobenzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,3-Dichlorobenzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,4-Dichlorobenzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Dichlorodifluoromethane	ug/kg	8.5 UJ	7.4 UJ	9.1 UJ	5.9 UJ
1,1-Dichloroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,2-Dichloroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,1-Dichloroethene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
cis-1,2-Dichloroethene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
trans-1,2-Dichloroethene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,2-Dichloropropane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
cis-1,3-Dichloropropene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
trans-1,3-Dichloropropene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Ethyl Benzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
2-Hexanone	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Isopropylbenzene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Methyl Acetate	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U

Analysis/ Analyte	Units	5-__	6-__	7-__	8-__
Methyl tert-butyl ether	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Methylcyclohexane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Methylene Chloride	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
4-Methyl-2-Pentanone	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Naphthalene	ug/kg	17 U	15 U	18 U	12 U
Styrene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,1,2,2-Tetrachloroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Tetrachloroethene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Toluene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,2,3-Trichlorobenzene	ug/kg	8.5 U	7.4 U	9.1 UJ	5.9 U
1,2,4-Trichlorobenzene	ug/kg	8.5 U	7.4 U	9.1 UJ	5.9 U
1,1,1-Trichloroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,1,2-Trichloroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Trichloroethene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Trichlorofluoromethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
1,1,2-Trichlorotrifluoroethane	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
Vinyl Chloride	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U
m and/or p-Xylene	ug/kg	17 U	15 U	18 U	12 U
o-Xylene	ug/kg	8.5 U	7.4 U	9.1 U	5.9 U

Analysis/ Analyte	Units	9-__	10-__	11-__
1 Herbicides in Soil by GC/EC				
2,4,5-T	ug/kg	10 U	10 U	10 U
2,4,5-TP	ug/kg	10 U	10 U	10 U
2,4-D	ug/kg	20 U	20 U	20 U
1 Percent Solid				
Solids, percent	%	85.6	80.6	80.3
1 Pesticides in Soil by GC/EC				
Aldrin	ug/kg	0.69 U	0.69 U	0.70 U
Aroclor 1016	ug/kg	23 U	23 U	23 U
Aroclor 1221	ug/kg	23 U	23 U	23 U
Aroclor 1232	ug/kg	23 U	23 U	23 U
Aroclor 1242	ug/kg	23 U	23 U	23 U
Aroclor 1248	ug/kg	23 U	23 U	23 U
Aroclor 1254	ug/kg	12 U	12 U	12 U
Aroclor 1260	ug/kg	58 U	58 U	58 U
A-BHC	ug/kg	0.35 U	0.35 U	0.35 U
B-BHC	ug/kg	1.2 U	1.2 U	1.2 U
D-BHC	ug/kg	0.46 U	0.46 U	0.46 U
G-BHC	ug/kg	0.46 U	0.46 U	0.46 U
Chlordane, technical	ug/kg	23 U	23 U	23 U
p,p'-DDD	ug/kg	0.92 U	0.92 U	0.93 U
p,p'-DDE	ug/kg	1.2 U	1.2 U	1.2 U
p,p'-DDT	ug/kg	1.2 UJ	1.2 UJ	1.2 UJ
Dieldrin	ug/kg	0.69 U	0.69 U	0.70 U
Endosulfan I	ug/kg	0.69 U	0.69 U	0.70 U
Endosulfan II	ug/kg	0.92 U	0.92 U	0.93 U
Endosulfan Sulfate	ug/kg	4.6 U	4.6 U	4.6 U
Endrin	ug/kg	4.6 U	4.6 U	4.6 U
Endrin Aldehyde	ug/kg	5.8 U	5.8 U	5.8 U
Endrin Ketone	ug/kg	4.6 U	4.6 U	4.6 U
Heptachlor	ug/kg	3.5 U	3.5 U	3.5 U
Heptachlor Epoxide	ug/kg	0.69 U	0.69 U	0.70 U
p,p'-Methoxychlor	ug/kg	2.3 UJ	2.3 UJ	2.3 UJ
Toxaphene	ug/kg	120 U	120 U	120 U
1 Semi-Volatile Organic Compounds in Soil				
Acenaphthene	ug/kg	93 U	99 U	100 U
Acenaphthylene	ug/kg	93 U	99 U	100 U
Anthracene	ug/kg	93 U	99 U	100 U
Benzo(a)anthracene	ug/kg	93 U	99 U	100 U
Benzo(a)pyrene	ug/kg	93 U	99 U	100 U
Benzo(b)fluoranthene	ug/kg	93 U	99 U	100 U
Benzo(g,h,i)perylene	ug/kg	93 UJ	99 UJ	100 UJ
Benzo(k)fluoranthene	ug/kg	93 U	99 U	100 U
Benzoic acid	ug/kg	460 UJ	590 J	500 UJ
Benzyl alcohol	ug/kg	230 U	250 U	250 U
bis(2-Chloroethoxy)methane	ug/kg	93 U	99 U	100 U

Analysis/ Analyte	Units	9-__	10-__	11-__
bis(2-Chloroethyl)ether	ug/kg	93 U	99 U	100 U
bis(2-Chloroisopropyl)ether	ug/kg	93 UJ	99 UJ	100 UJ
bis(2-Ethylhexyl)phthalate	ug/kg	230 U	250 U	250 U
4-Bromophenyl-phenylether	ug/kg	93 U	99 U	100 U
Butylbenzylphthalate	ug/kg	230 U	250 U	250 U
Carbazole	ug/kg	230 U	250 U	250 U
4-Chloro-3-methylphenol	ug/kg	230 U	250 U	250 U
4-Chloroaniline	ug/kg	460 UJ	500 UJ	500 UJ
2-Chloronaphthalene	ug/kg	93 U	99 U	100 U
2-Chlorophenol	ug/kg	230 U	250 U	250 U
4-Chlorophenyl-phenylether	ug/kg	93 UJ	99 UJ	100 UJ
Chrysene	ug/kg	93 U	99 U	100 U
Di-n-butylphthalate	ug/kg	230 U	250 U	250 U
Di-n-octylphthalate	ug/kg	230 U	250 U	250 U
Dibenz(a,h)anthracene	ug/kg	93 U	99 U	100 U
Dibenzofuran	ug/kg	93 U	99 U	100 U
1,2-Dichlorobenzene	ug/kg	93 U	99 U	100 U
1,3-Dichlorobenzene	ug/kg	93 U	99 U	100 U
1,4-Dichlorobenzene	ug/kg	93 U	99 U	100 U
3,3'-Dichlorobenzidine	ug/kg	460 U	500 U	500 U
2,4-Dichlorophenol	ug/kg	230 U	250 U	250 U
Diethylphthalate	ug/kg	93 U	99 U	100 U
2,4-Dimethylphenol	ug/kg	93 U	99 U	100 U
Dimethylphthalate	ug/kg	93 U	99 U	100 U
4,6-Dinitro-2-methylphenol	ug/kg	460 UJ	500 UJ	500 UJ
2,4-Dinitrophenol	ug/kg	460 UJ	500 UJ	500 UJ
2,4-Dinitrotoluene	ug/kg	93 U	99 U	100 U
2,6-Dinitrotoluene	ug/kg	93 U	99 U	100 U
Fluoranthene	ug/kg	93 U	99 U	100 U
Fluorene	ug/kg	93 U	99 U	100 U
Hexachlorobenzene	ug/kg	93 UJ	99 UJ	100 UJ
Hexachlorobutadiene	ug/kg	93 UJ	99 UJ	100 UJ
Hexachlorocyclopentadiene	ug/kg	93 UJ	99 UJ	100 UJ
Hexachloroethane	ug/kg	93 U	99 U	100 U
Indeno(1,2,3-cd)pyrene	ug/kg	93 U	99 U	100 U
Isophorone	ug/kg	93 U	99 U	100 U
2-Methylnaphthalene	ug/kg	93 U	99 U	100 U
2-Methylphenol	ug/kg	230 U	250 U	250 U
4-Methylphenol	ug/kg	230 U	250 U	250 U
Naphthalene	ug/kg	93 U	99 U	100 U
2-Nitroaniline	ug/kg	230 U	250 U	250 U
3-Nitroaniline	ug/kg	230 U	250 U	250 U
4-Nitroaniline	ug/kg	460 U	500 U	500 U
Nitrobenzene	ug/kg	93 U	99 U	100 U
2-Nitrophenol	ug/kg	230 U	250 U	250 U

Analysis/ Analyte	Units	9-__	10-__	11-__
4-Nitrophenol	ug/kg	460 U	500 U	500 U
N-nitroso-di-n-propylamine	ug/kg	230 UJ	250 UJ	250 UJ
N-nitrosodiphenylamine	ug/kg	93 U	99 U	100 U
Pentachlorophenol	ug/kg	230 UJ	250 UJ	250 UJ
Phenanthrene	ug/kg	93 U	99 U	100 U
Phenol	ug/kg	93 U	99 U	100 U
Pyrene	ug/kg	93 U	99 U	100 U
1,2,4-Trichlorobenzene	ug/kg	93 UJ	99 UJ	100 UJ
2,4,5-Trichlorophenol	ug/kg	230 U	250 U	250 U
2,4,6-Trichlorophenol	ug/kg	230 U	250 U	250 U
1 UAA Pesticides in Soil by GC/EC				
Malathion	ug/kg	4.6 U	4.6 U	4.6 U
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap				
Acetone	ug/kg	430 J	520 J	260 J
Benzene	ug/kg	7.4 U	8.9 U	6.1 U
Bromodichloromethane	ug/kg	7.4 U	8.9 U	6.1 U
Bromoform	ug/kg	7.4 U	8.9 U	6.1 U
Bromomethane	ug/kg	7.4 U	8.9 U	6.1 U
2-Butanone	ug/kg	23	27	17
Carbon Disulfide	ug/kg	7.4 U	8.9 U	6.1 U
Carbon Tetrachloride	ug/kg	7.4 U	8.9 U	6.1 U
Chlorobenzene	ug/kg	7.4 U	8.9 U	6.1 U
Chloroethane	ug/kg	7.4 U	8.9 U	6.1 U
Chloroform	ug/kg	7.4 U	8.9 U	6.1 U
Chloromethane	ug/kg	7.4 U	8.9 U	6.1 U
Cyclohexane	ug/kg	7.4 U	8.9 U	6.1 U
1,2-Dibromo-3-Chloropropane	ug/kg	7.4 U	8.9 U	6.1 U
Dibromochloromethane	ug/kg	7.4 U	8.9 U	6.1 U
1,2-Dibromoethane	ug/kg	7.4 U	8.9 U	6.1 U
1,2-Dichlorobenzene	ug/kg	7.4 U	8.9 U	6.1 U
1,3-Dichlorobenzene	ug/kg	7.4 U	8.9 U	6.1 U
1,4-Dichlorobenzene	ug/kg	7.4 U	8.9 U	6.1 U
Dichlorodifluoromethane	ug/kg	7.4 UJ	8.9 UJ	6.1 UJ
1,1-Dichloroethane	ug/kg	7.4 U	8.9 U	6.1 U
1,2-Dichloroethane	ug/kg	7.4 U	8.9 U	6.1 U
1,1-Dichloroethene	ug/kg	7.4 U	8.9 U	6.1 U
cis-1,2-Dichloroethene	ug/kg	7.4 U	8.9 U	6.1 U
trans-1,2-Dichloroethene	ug/kg	7.4 U	8.9 U	6.1 U
1,2-Dichloropropane	ug/kg	7.4 U	8.9 U	6.1 U
cis-1,3-Dichloropropene	ug/kg	7.4 U	8.9 U	6.1 U
trans-1,3-Dichloropropene	ug/kg	7.4 U	8.9 U	6.1 U
Ethyl Benzene	ug/kg	7.4 U	8.9 U	6.1 U
2-Hexanone	ug/kg	7.4 U	8.9 U	6.1 U
Isopropylbenzene	ug/kg	7.4 U	8.9 U	6.1 U
Methyl Acetate	ug/kg	7.4 U	8.9 U	6.1 U

Analysis/ Analyte	Units	9-__	10-__	11-__
Methyl tert-butyl ether	ug/kg	7.4 U	8.9 U	6.1 U
Methylcyclohexane	ug/kg	7.4 U	8.9 U	6.1 U
Methylene Chloride	ug/kg	7.4 U	8.9 U	6.1 U
4-Methyl-2-Pentanone	ug/kg	7.4 U	8.9 U	6.1 U
Naphthalene	ug/kg	15 U	18 U	12 U
Styrene	ug/kg	7.4 U	8.9 U	6.1 U
1,1,2,2-Tetrachloroethane	ug/kg	7.4 U	8.9 U	6.1 U
Tetrachloroethene	ug/kg	7.4 U	8.9 U	6.1 U
Toluene	ug/kg	7.4 U	8.9 U	6.1 U
1,2,3-Trichlorobenzene	ug/kg	7.4 U	8.9 U	6.1 U
1,2,4-Trichlorobenzene	ug/kg	7.4 U	8.9 U	6.1 U
1,1,1-Trichloroethane	ug/kg	7.4 U	8.9 U	6.1 U
1,1,2-Trichloroethane	ug/kg	7.4 U	8.9 U	6.1 U
Trichloroethene	ug/kg	7.4 U	8.9 U	6.1 U
Trichlorofluoromethane	ug/kg	7.4 U	8.9 U	6.1 U
1,1,2-Trichlorotrifluoroethane	ug/kg	7.4 U	8.9 U	6.1 U
Vinyl Chloride	ug/kg	7.4 U	8.9 U	6.1 U
m and/or p-Xylene	ug/kg	15 U	18 U	12 U
o-Xylene	ug/kg	7.4 U	8.9 U	6.1 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4525

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 01/14/2010

Subject: Transmittal of Sample Analysis Results for ASR #: 4734

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101

Project ID: BZA72Z01

Project Desc: Garvey Elevator - RI/FS sampling

Location: Hastings State: Nebraska Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

GPRA PRC: 302DD2C

Purpose: Site Characterization

Phase II On-site DPT GW sampling.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

Deg C = Degrees Celsius
NTU = Nephelometric Turbidity Units
SU = Standard Units (pH)
mg/L = Milligrams per Liter
ug/L = Micrograms per Liter
umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
R = The presence or absence of the analyte can not be determined from the data due to severe quality control problems. The data are rejected and considered unusable.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z01 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	SB-35 (128.5 - 124' bgs)		12/15/2009	16:10			12/17/2009
2 -	__	Water	SB-36 (125-129' bgs)		12/16/2009	10:05			12/17/2009
3 -	__	Water	SB-36 (120-124' bgs)		12/16/2009	10:35			12/17/2009
4 -	__	Water	SB-36 (116-120' bgs)		12/16/2009	10:50			12/17/2009
5 -	__	Water	SB-34 (126-130' bgs)		12/16/2009	14:35			12/17/2009
6 -	__	Water	SB-33 (146-150' bgs)		12/17/2009	09:50			12/18/2009
6 -	FD	Water	SB-33 (146-150' bgs)/Field Duplicate of sample 6		12/17/2009	09:51			12/18/2009
8 -	__	Water	SB-33 (140-144' bgs)		12/17/2009	10:20			12/18/2009
9 -	__	Water	SB-33 (134-138' bgs)		12/17/2009	10:40			12/18/2009
10 -	__	Water	SB-33 (128-132' bgs)		12/17/2009	11:10			12/18/2009
11 -	__	Water	SB-38 (138-142' bgs)		12/17/2009	15:20			12/18/2009
12 -	__	Water	SB-38 (130-134' bgs)		12/17/2009	15:50			12/18/2009
13 -	__	Water	SB-38 (124-128' bgs)		12/17/2009	16:05			12/18/2009
14 -	__	Water	SB-39 (136-140' bgs)		12/18/2009	10:00			12/22/2009
15 -	__	Water	SB-37 (125-129' bgs)		12/18/2009	13:25			12/22/2009
16 -	__	Water	SB-37 (120-124')		12/18/2009	14:20			12/22/2009
17 -	__	Water	SB-40 (125-129' bgs)		12/18/2009	16:15			12/22/2009
17 -	FD	Water	SB-40 (125-129' bgs)/Field Duplicate of sample 17		12/18/2009	16:16			12/22/2009
19 -	__	Water	SB-40 (120-124' bgs)		12/18/2009	17:00			12/22/2009
31 -	FB	Water	LDL VOA & EDB/DBCP Trip Blank sample 1		12/15/2009	15:12	12/15/2009	15:20	12/17/2009
32 -	FB	Water	LDL VOA & EDB/DBCP Trip Blank sample 2		12/17/2009	08:00			12/18/2009
33 -	FB	Water	LDL VOA & EDB/DBCP Trip Blank sample 3		12/18/2009	07:30			12/22/2009

Analysis Comments About Results For This Analysis

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	2-__	3-__	4-__	5-__	6-__	6-FD	8-__
	9-__	10-__	11-__	12-__	13-__	14-__	15-__
	16-__	17-__	17-FD	19-__			

Comments:
(N/A)

1 EDB and DBCP in Drinking Water by GC/ECD

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__	10-__	11-__	12-__	13-__	14-__
	15-__	16-__	17-__	17-FD	19-__	31-FB	32-FB
	33-FB						

Comments:
High recoveries were reported for 1,4-dichlorobenzene-d4 (control limits = 60% - 140%) in samples -1 (152%) and -2 (168%). The recoveries for this internal standard in the re-analysis of these samples were also above control limits (151% and 148%, respectively).
1,2-dibromo-3-chloropropane was UJ-coded in samples -1 and -2. This analyte was not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to high internal standard responses. The actual reporting limits for this analyte may be higher than the reported values.

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	2-__	3-__	4-__	5-__	6-__	6-FD	8-__
	9-__	10-__	11-__	12-__	13-__	14-__	15-__
	16-__	17-__	17-FD	19-__			

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	2-__	3-__	4-__	5-__	6-__	6-FD	8-__
	9-__	10-__	11-__	12-__	13-__	14-__	15-__

Analysis	Comments About Results For This Analysis

Samples: 16-__ 17-__ 17-FD 19-__

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD 8-__
9-__ 10-__ 11-__ 12-__ 13-__ 14-__ 15-__
16-__ 17-__ 17-FD 19-__

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD 8-__
9-__ 10-__ 11-__ 12-__ 13-__ 14-__ 15-__
16-__ 17-__ 17-FD 19-__

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__ 10-__ 11-__ 12-__ 13-__ 14-__
15-__ 16-__ 17-__ 17-FD 19-__ 31-FB 32-FB
33-FB

Comments:
Sample -16 and the dilution of sample -16 were analyzed 1 day past the 14 day holding time. Acetone, benzene, carbon tetrachloride, chlorobenzene and chloroform were J-coded in sample -16. The actual concentration of some or all analytes may have been higher than the reported result.
The results for analytes that were not found at or above the reporting limits were UJ-coded in sample -16 to indicate that the reporting limit is an estimated value. The actual reporting limit may be higher than the reported value.

Low recovery were reported for 1,2-dichloropropane-d6 (control limits = 79% - 124%) in samples -1 (78%) and -2 (75%). Bromodichloromethane, cyclohexane, 1,2-dichloropropane and methylcyclohexane were UJ-coded in samples -1 and -2. These analytes were not found in the samples at or above the reporting limits; however, the

Analysis	Comments About Results For This Analysis

reporting limits are an estimate (UJ-coded) due to low recovery of the surrogate analyte. The actual reporting limits for these analytes may be higher than the reported values.

Low recovery was reported for 1,4-dichlorobenzene (control limits = 60% - 140%) in sample -19 (59%). This internal standard had unacceptable response indicating that is was not possible to obtain valid results for bromoform, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene. Results of 'N/A' were reported with R-codes for these analytes in this sample.

High recoveries were reported for toluene (control limits = 76% - 125%) in samples -1MS (160%) and -1MSD (126%).
Toluene was J-coded in sample -1. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of this analyte in the laboratory matrix spike / laboratory matrix spike duplicate. The actual concentration for this analyte may be lower than the reported value.

High RPDs were calculated for benzene (22% vs. 11%), chlorobenzene (23% vs. 13%), 1,1-dichloroethene (27% vs. 14%), toluene (19% vs. 13%) and trichloroethene (20% vs. 14%) in the matrix spike / matrix spike duplicate of sample -1. Benzene, chlorobenzene, 1,1-dichloroethene and trichloroethene were UJ-coded in sample -1. These analyte were not found in the sample at or above the reporting limit; however, the reporting limits are an estimate (UJ-coded) due to poor precision obtained for these analytes in the laboratory matrix spike and matrix spike duplicate. The actual reporting limits for these analytes may be higher than the reported values.
Toluene was J-coded in sample -1. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate.

Slight methylene chloride contamination was found in the laboratory method blank. Only samples containing this analyte at a level greater than ten times the contamination level of the blank are reported without being qualified. All samples that contained this analyte but at a level less than ten times the contamination in the blank have the result U-coded indicating that the reporting limit has been raised to the level found in the sample. Samples affected were: 4734-1.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		0.840	0.920	0.909
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 UJ	0.020 UJ	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU		6.04	6.75	6.81
1 Temperature of Water by Field Measurement					
Temperature	Deg C		2.87	6.82	8.65
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L		3.46	27.28	5.24
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	9.6	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	7.5	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	31	0.50 U	1.8	6.3
Chlorobenzene	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	4.9	0.50 U	0.50 U	3.3
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Methylcyclohexane	ug/L	0.50 UJ	0.50 UJ	0.50 U	0.50 U
Methylene Chloride	ug/L	2.6 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	1.9 J	1.7	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	1.1	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.51	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.888	0.691	0.691	0.627
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.38	6.10	6.10	6.49
1 Temperature of Water by Field Measurement					
Temperature	Deg C	5.15	5.26	5.26	5.54
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	22.95	4.59	4.59	11.72
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	43	11	5.0 U
Benzene	ug/L	0.50 U	0.71	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	7.7	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	4.0	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	5.0	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	1.2	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	1.5	2.4	1.7	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.622	0.639	0.796	0.949
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.52	6.67	6.93	6.87
1 Temperature of Water by Field Measurement					
Temperature	Deg C	6.17	6.91	15.49	10.71
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	12.22	10.31	6.84	9.77
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	9.8	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	97	63
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	7.2	9.6
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	1.7	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	4.9
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.993	0.741	0.811	0.813
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.04	6.26	6.72	6.89
1 Temperature of Water by Field Measurement					
Temperature	Deg C	11.60	6.45	11.57	11.80
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	6.77	5.90	9.33	5.68
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	19	9.7 J
Benzene	ug/L	0.50 U	2.1	4.0	0.86 J
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.82	0.50 UJ
Carbon Tetrachloride	ug/L	77	0.50 U	13	24 J
Chlorobenzene	ug/L	0.50 U	0.86	2.5	0.83 J
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Chloroform	ug/L	3.3	0.50 U	4.7	7.0 J
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Trichloroethene	ug/L	6.8	0.50 U	0.50 U	0.50 UJ
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 UJ

Analysis/ Analyte	Units	17-__	17-FD	19-__	31-FB
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.796	0.796	0.803	
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.68	6.68	6.82	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	10.07	10.07	9.41	
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	6.20	6.20	6.88	
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	9.0	13	5.0 U	5.0 U
Benzene	ug/L	2.7	3.8	1.8	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	N/A R	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	4.5	3.5	10	0.50 U
Chlorobenzene	ug/L	1.8	2.5	0.94	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	1.4	2.1	3.8	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	N/A R	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	N/A R	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	N/A R	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	17-__	17-FD	19-__	31-FB
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	N/A R	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	N/A R	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	32-FB	33-FB
1 EDB and DBCP in Drinking Water by GC/ECD			
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U
1 VOCs in Water by GC/MS for Low Detection Limits			
Acetone	ug/L	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U

Analysis/ Analyte	Units	32-FB	33-FB
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4734

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until ______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

- ☐ Samples are associated with a legal proceeding.
- ☐ Question/Concern with data - possible reanalysis requested.
- ☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 01/19/2010

Subject: Transmittal of Sample Analysis Results for ASR #: 4735

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101
Project ID: BZA72Z02
Project Desc: Garvey Elevator - RI/FS sampling
Location: Hastings State: Nebraska Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02
Purpose: Site Characterization GPRA PRC: 302DD2C

Phase II On-site DPT GW sampling = OU #02.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

- __ = Field Sample
- FB = Field Blank
- FD = Field Duplicate

Units: Specific units in which results are reported.

- Deg C = Degrees Celsius
- NTU = Nephelometric Turbidity Units
- SU = Standard Units (pH)
- mg/L = Milligrams per Liter
- ug/L = Micrograms per Liter
- umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

- (Blank) = Values have been reviewed and found acceptable for use.
- J = The identification of the analyte is acceptable; the reported value is an estimate.
- U = The analyte was not detected at or above the reporting limit.
- UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

ASR Number: 4735 Sample Information Summary 01/19/2010

Project ID: BZA72Z02 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	TS4-01 (214-218' bgs)		12/20/2009	10:45			12/22/2009
2 -	__	Water	TS4-01 (204-208' bgs)		12/20/2009	11:20			12/22/2009
3 -	__	Water	TS4-01 (194-198' bgs)		12/20/2009	11:40			12/22/2009
4 -	__	Water	TS4-01 (184-188' bgs)		12/20/2009	12:05			12/22/2009
4 -	FD	Water	TS4-01 (184-188' bgs)/Field Duplicate of sample 4		12/20/2009	12:06			12/22/2009
6 -	__	Water	TS4-01 (174-178' bgs)		12/20/2009	12:50			12/22/2009
7 -	__	Water	TS4-01 (164-168' bgs)		12/20/2009	13:20			12/22/2009
8 -	__	Water	Rinsate sample		12/20/2009	14:30			12/22/2009
9 -	__	Water	TS4-03 (169-173' bgs)		12/21/2009	10:00			12/22/2009
10 -	__	Water	TS4-03 (159-163' bgs)		12/21/2009	10:30			12/22/2009
10 -	FD	Water	TS4-03 (159-163' bgs)/Field Duplicate of sample 10		12/21/2009	10:31			12/22/2009
12 -	__	Water	TD4-03 (149-153' bgs)		12/21/2009	11:00			12/22/2009
13 -	__	Water	TS4-03 (138-142' bgs)		12/21/2009	11:20			12/22/2009
14 -	__	Water	TS4-03 (124-128' bgs)		12/21/2009	11:45			12/22/2009
31 -	FB	Water	EDB/DBCP & LDL VOA Trip Blank sample 1		12/19/2009	07:30			12/22/2009

Analysis Comments About Results For This Analysis

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 6-__ 7-__
9-__ 10-__ 10-FD 12-__ 13-__ 14-__

Comments:
(N/A)

1 EDB and DBCP in Drinking Water by GC/ECD

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 6-__ 7-__
8-__ 9-__ 10-__ 10-FD 12-__ 13-__ 14-__
31-FB

Comments:
High recoveries were reported for chlorobenzene-d5 (control limits = 60% - 140%) in samples -4FD (151%) and the re-analysis of -4FD (149%); and for 1,4-dichlorobenzene-d4 (control limits = 60% - 140%) in samples -4 (141%), -4FD (154%) and the re-analysis of samples -4 (154%) and -4FD (153%).
1,2-Dibromo-3-chloropropane was UJ-coded in samples -4 and -4FD. 1,2-Dibromoethane was UJ-coded in sample -4FD. These analytes were not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to high internal standard responses. The actual reporting limits for these analytes may be higher than the reported values.

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 6-__ 7-__
9-__ 10-__ 10-FD 12-__ 13-__ 14-__

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 4-FD 6-__ 7-__
9-__ 10-__ 10-FD 12-__ 13-__ 14-__

Comments:

Analysis Comments About Results For This Analysis

(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	4-__	4-FD	6-__	7-__
9-__	10-__	10-FD	12-__	13-__	14-__	

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	4-__	4-FD	6-__	7-__
9-__	10-__	10-FD	12-__	13-__	14-__	

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples:						
1-__	2-__	3-__	4-__	4-FD	6-__	7-__
8-__	9-__	10-__	10-FD	12-__	13-__	14-__
31-FB						

Comments:
Low recoveries were reported for chloroethane-d5 (control limits = 71% - 131%) in samples -2 (60%), -3 (60%), -4 (63%), -4FD (63%), -6 (68%) and -7 (69%).
Bromomethane, carbon disulfide, chloroethane, chloromethane and dichlorodifluoromethane were UJ-coded in samples -2, -3, -4, -4FD, -6 and -7. These analytes were not found in the samples at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to low recovery of the surrogate analyte. The actual reporting limits for these analytes may be higher than the reported values.

High recovery was reported for benzene (control limits = 76% - 127%) in sample -1MS (142%).
Benzene was J-coded in sample -1. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of this analyte in the laboratory matrix spike. The actual concentration for this analyte may be lower than the reported value.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0,552	0.434	0.466	0.547
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U	0.020 UJ
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.49	6.65	6.56	6.77
1 Temperature of Water by Field Measurement					
Temperature	Deg C	11.21	11.92	11.38	8.81
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	3.29	2.19	0.59	3.68
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	3.9 J	0.71	0.71	1.0
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	1.5	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
Chloroform	ug/L	0.50 U	1.1	2.1	1.3
Chloromethane	ug/L	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	4-FD	6-__	7-__	8-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.547	0.749	0.739	
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 UJ	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 UJ	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	6.77	6.59	6.39	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	8.81	10.44	10.82	
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	3.68	2.34	0.61	
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0	0.51	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Chloroform	ug/L	1.3	0.50 U	0.50 U	1.3
Chloromethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.86
Dichlorodifluoromethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	4-FD	6-__	7-__	8-__
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	9-__	10-__	10-FD	12-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.733	0.725	0.725	0.633
1 EDB and DBCP in Drinking Water by GC/ECD					
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement					
pH	SU	7.19	6.77	6.77	6.58
1 Temperature of Water by Field Measurement					
Temperature	Deg C	12.83	10.24	10.24	11.06
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	8.27	4.38	4.38	5.51
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	>1000	>1000	>1000	>1000
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	9-__	10-__	10-FD	12-__
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	1.4	0.86	0.92	0.53
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	13-__	14-__	31-FB
1 Conductivity by Field Measurement				
Conductivity	umhos/cm	0.871	0.895	
1 EDB and DBCP in Drinking Water by GC/ECD				
1,2-Dibromo-3-Chloropropane	ug/L	0.020 U	0.020 U	0.020 U
1,2-Dibromoethane	ug/L	0.020 U	0.020 U	0.020 U
1 pH of Water by Field Measurement				
pH	SU	6.65	6.79	
1 Temperature of Water by Field Measurement				
Temperature	Deg C	11.69	12.20	
1 Total Dissolved Oxygen in Water by Field Measurement				
Dissolved Oxygen	mg/L	4.67	2.83	
1 Turbidity of Water by Field Measurement				
Turbidity	NTU	>1000	>1000	
1 VOCs in Water by GC/MS for Low Detection Limits				
Acetone	ug/L	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	13-__	14-__	31-FB
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4735

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until ______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 06/18/2010

Subject: Transmittal of Sample Analysis Results for ASR #: 4898

Project ID: BZA72Z02WI

Project Description: Garvey Elevator - Off-site permanent well boring soil sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101
Project ID: BZA72Z02WI
Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling
Location: Hastings State: Nebraska Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02
Purpose: Site Characterization GPRA PRC: 302DD2C

Off-site permanent well soil boring sampling = OU #02.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample

Units: Specific units in which results are reported.

% = Percent
SU = Standard Units (pH)

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z02WI Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Solid	MW-46D2 (192-196')		04/16/2010	08:40			05/06/2010
2 -	__	Solid	MW-41D2 (154-158')		04/18/2010	13:20			05/06/2010
3 -	__	Solid	MW-12D (172-176')		05/03/2010	10:40			05/06/2010
4 -	__	Solid	MW-45D (156-160')		04/30/2010	14:15			05/06/2010
5 -	__	Solid	MW-42E (147-151')		05/12/2010	09:00			05/19/2010
6 -	__	Solid	MW-44E (187-191')		05/15/2010	12:45			05/19/2010

Analysis	Comments About Results For This Analysis

1 Percent Solid

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3142.9F

Basis: N/A

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__

Comments:
(N/A)

1 pH of Soil

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3135.4E

Basis: N/A

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__

Comments:
Samples 1-6 were analyzed 10 or more days past their 1 day holding time. All positive results were reported with a J-code indicating that they are estimated values.

1 Total Organic Carbon in Soil

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3151.2C

Basis: Dry

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__

Comments:
Although the sample preparation had begun before the samples were out of holding time, samples 4898-1, 4898-2, 4898-3, and 4898-4 were analyzed 6 days past their 28-day holding time. The results were not found at or above the reporting limit and were UJ-coded to indicate that the reporting limit is an estimated value. The actual reporting limit may be higher than the reported value.

Project ID: BZA72Z02WI Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Percent Solid					
Solids, percent	%	86.6	83.9	85.5	89.4
1 pH of Soil					
pH	SU	7.59 J	8.06 J	8.05 J	8.69 J
1 Total Organic Carbon in Soil					
Total Organic Carbon	%	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ

Project ID: BZA72Z02WI Project Desc: Garvey Elevator - Off-site permanent well boring soil sampling

Analysis/ Analyte	Units	5-__	6-__
1 Percent Solid			
Solids, percent	%	87.0	91.1
1 pH of Soil			
pH	SU	8.72 J	8.21 J
1 Total Organic Carbon in Soil			
Total Organic Carbon	%	0.10 U	0.10 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4898

Project ID: BZA72Z02WI

Project Description: Garvey Elevator - Off-site permanent well boring soil sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until ______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 07/22/2010

Subject: Transmittal of Sample Analysis Results for ASR #: 4931

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101

Project ID: BZA72Z01

Project Desc: Garvey Elevator - RI/FS sampling

Location: Hastings State: Nebraska Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

GPRA PRC: 302DD2C

Purpose: Compliance Monitoring

Monitoring well sampling - OU #01.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

Deg C = Degrees Celsius
NTU = Nephelometric Turbidity Units
SU = Standard Units (pH)
mg/L = Milligrams per Liter
ug/L = Micrograms per Liter
umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	MW-30-D		06/16/2010	09:30			06/17/2010
2 -	__	Water	MW-30-C		06/16/2010	11:03			06/17/2010
3 -	__	Water	MW-30-A		06/16/2010	13:45			06/17/2010
4 -	__	Water	MW-8A		06/18/2010	10:27			06/22/2010
5 -	__	Water	MW-3A		06/19/2010	10:00			06/22/2010
6 -	__	Water	MW-3B		06/19/2010	11:20			06/22/2010
6 -	FD	Water	MW-3B/Field Duplicate of sample 6		06/19/2010	11:40			06/22/2010
8 -	__	Water	MW-3D		06/19/2010	13:20			06/22/2010
9 -	__	Water	MW-3E		06/19/2010	15:54			06/22/2010
10 -	__	Water	MW-31-C		06/15/2010				06/17/2010
11 -	__	Water	MW-31-A		06/15/2010	17:47			06/17/2010
12 -	__	Water	MW-30-E		06/16/2010	08:32			06/17/2010
13 -	__	Water	MW-20-D		06/16/2010	16:55			06/18/2010
14 -	__	Water	MW-20-C		06/16/2010	17:30			06/18/2010
15 -	__	Water	MW-20-E		06/16/2010	18:55			06/18/2010
16 -	__	Water	MW-19-C		06/17/2010	08:27			06/18/2010
17 -	__	Water	MW-19-A		06/17/2010	09:16			06/18/2010
18 -	__	Water	MW-20-A		06/17/2010	10:37			06/18/2010
19 -	__	Water	MW-7-A		06/17/2010	12:50			06/18/2010
20 -	__	Water	MW-7B		06/17/2010	15:50			06/22/2010
21 -	__	Water	MW-9A		06/17/2010	17:55			06/22/2010
22 -	__	Water	MW-1A		06/18/2010	08:55			06/22/2010
23 -	__	Water	MW-2A		06/18/2010	12:57			06/22/2010
24 -	__	Water	MW-13C		06/18/2010	14:22			06/22/2010
24 -	FD	Water	MW-13C/Field Duplicate of sample 24		06/18/2010	14:25			06/22/2010
26 -	__	Water	MW-13E		06/18/2010	15:50			06/22/2010
27 -	__	Water	MW-4A		06/18/2010	17:43			06/22/2010
28 -	__	Water	MW-4B		06/18/2010	19:10			06/22/2010
29 -	__	Water	Rinsate sample		06/19/2010	14:45			06/22/2010
30 -	__	Water	MW-5B		06/20/2010	08:32			06/22/2010
30 -	FD	Water	MW-5B/Field Duplicate of sample 30		06/20/2010	08:35			06/22/2010
32 -	__	Water	MW-5A		06/20/2010	09:40			06/22/2010
33 -	__	Water	MW-5D		06/20/2010	11:17			06/22/2010
34 -	__	Water	MW-6D		06/20/2010				06/22/2010
34 -	FD	Water	MW-6D/Field Duplicate of sample 34		06/20/2010				06/22/2010
36 -	__	Water	MW-6A		06/20/2010	14:40			06/22/2010
37 -	__	Water	MW-6E		06/20/2010	16:23			06/22/2010
38 -	__	Water	Old Dean Rolls well		06/21/2010	08:50			06/22/2010
39 -	__	Water	New Dean Rolls well		06/21/2010	08:40			06/22/2010
41 -	FB	Water	LDL VOA Trip Blank sample 2		06/17/2010	14:30			06/18/2010
42 -	FB	Water	LDL VOA Trip Blank sample 3		06/19/2010	15:20			06/22/2010

Analysis	Comments About Results For This Analysis

1 Alkalinity in Water by Titration

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3132.1E

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__

Comments:

1 Anions in Water by Ion Chromatography

Lab: Region 7 ESAT Contract Lab (In-House)

Method: Region 7 RLAB Method 3135.12A

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__

Comments:

Chloride (128, 80-120) was J-coded in sample 4. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of this analyte in the laboratory matrix spike duplicate. The actual concentration for this analyte may be lower than the reported value.

1 Carbon Dioxide in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 5-__ 6-__ 6-FD 9-__

Comments:
(N/A)

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__ 10-__ 11-__ 12-__ 14-__ 15-__
16-__ 17-__ 18-__ 19-__ 20-__ 21-__ 22-__
23-__ 24-__ 24-FD 26-__ 27-__ 28-__ 30-__
30-FD 32-__ 33-__ 34-__ 34-FD 36-__ 37-__

Comments:
(N/A)

1 Ferrous Iron in Water by Field Measurement

Lab: (Field Measurement)

Analysis	Comments About Results For This Analysis

Method: Measurement of field parameter

Samples: 5-__ 6-__ 6-FD 9-__

Comments:
(N/A)

1 Methane, Ethane, Ethene in Water by GC/FID

Lab: RASP Contract Lab (Out-Source)

Method: Similar to RECAP SOP for Methane, Ethane, and Ethene (see comments)

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__

Comments:
(N/A)

1 NFS or Nonfilterable Solids

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3142.3E

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__

Comments:

1 Nitrogen, Nitrate+Nitrite in Water

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3133.2H for acidified samples (for total NO3+NO2 analysis).

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__

Comments:

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__ 10-__ 11-__ 12-__ 14-__ 15-__
16-__ 17-__ 18-__ 19-__ 20-__ 21-__ 22-__
23-__ 24-__ 24-FD 26-__ 27-__ 28-__ 30-__
30-FD 32-__ 33-__ 34-__ 34-FD 36-__ 37-__

Comments:

Analysis Comments About Results For This Analysis

(N/A)

1 TDS or Total Dissolved Solids

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3142.2C

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__ 10-__ 11-__ 12-__ 14-__ 15-__
16-__ 17-__ 18-__ 19-__ 20-__ 21-__ 22-__
23-__ 24-__ 24-FD 26-__ 27-__ 28-__ 30-__
30-FD 32-__ 33-__ 34-__ 34-FD 36-__ 37-__

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 4-__ 5-__ 6-__ 6-FD
8-__ 9-__ 10-__ 11-__ 12-__ 14-__ 15-__
16-__ 17-__ 18-__ 19-__ 20-__ 21-__ 22-__
23-__ 24-__ 24-FD 26-__ 27-__ 28-__ 30-__
30-FD 32-__ 33-__ 34-__ 34-FD 36-__ 37-__

Comments:
(N/A)

1 Total Organic Carbon in Water

Lab: RASP Contract Lab (Out-Source)

Method: Similar to EPA SW846 Method 9060 or StandardMethods (20th Edtion) 5310 B, C, or D (see comments)

Samples: 1-__ 2-__ 3-__ 4-__ 6-__ 6-FD 8-__

Comments:

Analysis Comments About Results For This Analysis

1 Total Phosphorus in Water, Colorimetric

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3133.4E

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__					

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__	10-__	11-__	12-__	14-__	15-__
	16-__	17-__	18-__	19-__	20-__	21-__	22-__
	23-__	24-__	24-FD	26-__	27-__	28-__	30-__
	30-FD	32-__	33-__	34-__	34-FD	36-__	37-__

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples:							
	1-__	2-__	3-__	4-__	5-__	6-__	6-FD
	8-__	9-__	10-__	11-__	12-__	13-__	14-__
	15-__	16-__	17-__	18-__	19-__	20-__	21-__
	22-__	23-__	24-__	24-FD	26-__	27-__	28-__
	29-__	30-__	30-FD	32-__	33-__	34-__	34-FD
	36-__	37-__	38-__	39-__	41-FB	42-FB	

Comments:
Dilutions were necessary because of high levels of carbon tetrachloride in samples -6, -6FD, -24FD and 28 for this analysis. This increased the reporting limits by a factor of 2 times for samples -6, -6FD and -24FD; and by a factor of 10 times for sample -28.

The RPD for bromomethane (36.9%) was above the control limits (30%) on the IC of 6/28/10. Bromomethane was UJ-coded in samples -39 and -42FB. This analyte was not found in the samples at or above the reporting limit; however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration curve not meeting linearity specifications. The actual reporting limit may be higher than the reported value.

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	255	232	273	421
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	22.3	21.2	22.5	85.0 J
Sulfate	mg/L	38.2	39.8	43.3	59.7
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.651	0.617	0.778	1.37
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U	2 U	2 U	2 U
Ethene	ug/L	3 U	3 U	3 U	3 U
Methane	ug/L	9	2	1 U	1 U
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	4.09	4.00 U	4.89	4.0 U
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	9.54	12.6	12.7	26.4
1 pH of Water by Field Measurement					
pH	SU	7.17	7.9	8.06	7.07
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	477	460	512	828
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.62	16.72	15.97	13.99
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	3.34	9.90	0.0	9.97
1 Total Organic Carbon in Water					
Total Organic Carbon	mg/L	8.4	1.2	2.3	1.9
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.413	0.357	0.303	0.372
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	5.7	1.5	0.5	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	9.8	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.65	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	90	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	2.5	0.98	2.8	1.5
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.65	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	262	274	281	248
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	34.8	32.6	32.3	17.0
Sulfate	mg/L	57.9	68.3	69.2	31.4
1 Carbon Dioxide in Water by Field Measurement					
Carbon Dioxide	mg/L	10	10	10	
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.841	0.886	0.886	0.666
1 Ferrous Iron in Water by Field Measurement					
Iron, Ferrous	mg/L	0.03	0.01	0.01	
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U	2 U	2 U	2 U
Ethene	ug/L	3 U	3 U	3 U	3 U
Methane	ug/L	1 U	1 U	1 U	1 U
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	4.0 U	4.0 U	4.0 U	4.0 U
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	18.3	18.4	17.8	11.6
1 pH of Water by Field Measurement					
pH	SU	7.01	6.99	6.99	7.13
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	533	579	578	443
1 Temperature of Water by Field Measurement					
Temperature	Deg C	14.83	15.94	15.94	15.67
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	10.04	9.20	9.20	6.87
1 Total Organic Carbon in Water					
Total Organic Carbon	mg/L		2.3	2.2	1.5
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.325	0.314	0.311	0.191
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	0.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	10 U	10 U	5.0 U
Benzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Bromochloromethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Bromoform	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Bromomethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
2-Butanone	ug/L	5.0 U	10 U	10 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Carbon Tetrachloride	ug/L	7.4	190	170	0.50 U
Chlorobenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Chloroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Chloroform	ug/L	0.50 U	1.0 U	1.0 U	0.50 U

Analysis/ Analyte	Units	5-__	6-__	6-FD	8-__
Chloromethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Cyclohexane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
2-Hexanone	ug/L	5.0 U	10 U	10 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Methyl Acetate	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Methylene Chloride	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	10 U	10 U	5.0 U
Styrene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Toluene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Trichloroethene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U
o-Xylene	ug/L	0.50 U	1.0 U	1.0 U	0.50 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	216			
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	18.6			
Sulfate	mg/L	36.0			
1 Carbon Dioxide in Water by Field Measurement					
Carbon Dioxide	mg/L	15			
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.547	0.381	0.893	0.587
1 Ferrous Iron in Water by Field Measurement					
Iron, Ferrous	mg/L	0.11			
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U			
Ethene	ug/L	3 U			
Methane	ug/L	1			
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	4.0 U			
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	11.1			
1 pH of Water by Field Measurement					
pH	SU	7.84	7.10	6.94	7.48
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	402			
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.43	15.05	16.67	14.67
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.49	6.65	0.0	7.84
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.296			
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	0.0	3.3	0.2
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	76	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.79	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	11	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	7.9	3.1
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	2.4	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		0.597	0.555	0.738
1 pH of Water by Field Measurement					
pH	SU		7.06	7.95	6.89
1 Temperature of Water by Field Measurement					
Temperature	Deg C		17.99	16.62	16.19
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L		0.0	6.04	7.86
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		6.5	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	13-__	14-__	15-__	16-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.60	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	17-__	18-__	19-__	20-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1.01	0.767	0.782	0.795
1 pH of Water by Field Measurement					
pH	SU	7.11	8.41	7.01	6.93
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.84	17.56	14.33	15.20
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.49	0.0	9.25	7.78
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	1.6	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	69	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	2.2	0.85	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	17-__	18-__	19-__	20-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	3.7	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	21-__	22-__	23-__	24-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.892	0.792	0.698	0.662
1 pH of Water by Field Measurement					
pH	SU	7.76	6.96	6.70	7.18
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.88	15.06	16.02	15.84
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	9.26	8.90	5.50	10.22
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	0.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	160
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	21-__	22-__	23-__	24-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	24-FD	26-__	27-__	28-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.662	0.442	0.863	0.873
1 pH of Water by Field Measurement					
pH	SU	7.18	7.42	7.07	7.07
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.84	20.62	15.32	15.07
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	10.22	5.81	9.35	8.88
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	29.9	0.4	26.5
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	10 U	5.0 U	5.0 U	50 U
Benzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Bromochloromethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Bromodichloromethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Bromoform	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Bromomethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
2-Butanone	ug/L	10 U	5.0 U	5.0 U	50 U
Carbon Disulfide	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Carbon Tetrachloride	ug/L	170	0.50 U	12	1300
Chlorobenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Chloroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Chloroform	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Chloromethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Cyclohexane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2-Dibromo-3-Chloropropane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2-Dibromoethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Dichlorodifluoromethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,1-Dichloroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2-Dichloroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,1-Dichloroethene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2-Dichloropropane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Ethyl Benzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
2-Hexanone	ug/L	10 U	5.0 U	5.0 U	50 U
Isopropylbenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Methyl Acetate	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Methylcyclohexane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U

Analysis/ Analyte	Units	24-FD	26-__	27-__	28-__
Methylene Chloride	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
4-Methyl-2-Pentanone	ug/L	10 U	5.0 U	5.0 U	50 U
Styrene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Tetrachloroethene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Toluene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Trichloroethene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Trichlorofluoromethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
Vinyl Chloride	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
m and/or p-Xylene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U
o-Xylene	ug/L	1.0 U	0.50 U	0.50 U	5.0 U

Analysis/ Analyte	Units	29-__	30-__	30-FD	32-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		0.905	0.905	0.826
1 pH of Water by Field Measurement					
pH	SU		7.00	7.00	7.06
1 Temperature of Water by Field Measurement					
Temperature	Deg C		13.50	13.50	13.76
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L		10.99	10.99	12.21
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		0.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.91	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	24	27	13
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.76	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	29-__	30-__	30-FD	32-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	33-__	34-__	34-FD	36-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.583	0.542	0.542	0.833
1 pH of Water by Field Measurement					
pH	SU	7.01	7.06	7.06	6.95
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.17	16.34	16.34	15.16
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	10.30	7.50	7.50	9.72
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	15.2	15.2	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	17
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	33-__	34-__	34-FD	36-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	37-__	38-__	39-__	41-FB
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.317			
1 pH of Water by Field Measurement					
pH	SU	7.33			
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.24			
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	2.35			
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	7.6			
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	33	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	37-__	38-__	39-__	41-FB
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	42-FB
1 VOCs in Water by GC/MS for Low Detection Limits		
Acetone	ug/L	5.0 U
Benzene	ug/L	0.50 U
Bromochloromethane	ug/L	0.50 U
Bromodichloromethane	ug/L	0.50 U
Bromoform	ug/L	0.50 U
Bromomethane	ug/L	0.50 UJ
2-Butanone	ug/L	5.0 U
Carbon Disulfide	ug/L	0.50 U
Carbon Tetrachloride	ug/L	0.50 U
Chlorobenzene	ug/L	0.50 U
Chloroethane	ug/L	0.50 U
Chloroform	ug/L	0.50 U
Chloromethane	ug/L	0.50 U
Cyclohexane	ug/L	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U
Dibromochloromethane	ug/L	0.50 U
1,2-Dibromoethane	ug/L	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U
1,1-Dichloroethane	ug/L	0.50 U
1,2-Dichloroethane	ug/L	0.50 U
1,1-Dichloroethene	ug/L	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U
1,2-Dichloropropane	ug/L	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U
Ethyl Benzene	ug/L	0.50 U
2-Hexanone	ug/L	5.0 U
Isopropylbenzene	ug/L	0.50 U
Methyl Acetate	ug/L	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U
Methylcyclohexane	ug/L	0.50 U
Methylene Chloride	ug/L	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U
Styrene	ug/L	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U
Tetrachloroethene	ug/L	0.50 U
Toluene	ug/L	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U

Analysis/ Analyte	Units	42-FB
Trichloroethene	ug/L	0.50 U
Trichlorofluoromethane	ug/L	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U
Vinyl Chloride	ug/L	0.50 U
m and/or p-Xylene	ug/L	0.50 U
o-Xylene	ug/L	0.50 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4931

Project ID: BZA72Z01

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ____________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until _______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, KS 66101

Date: 07/22/2010

Subject: Transmittal of Sample Analysis Results for ASR #: 4932

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Michael F. Davis, Chief
Chemical Analysis and Response Branch, Environmental Services Division

To: Brian Zurbuchen
SUPR/IANE

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Brian Zurbuchen Org: SUPR/IANE Phone: 913-551-7101
Project ID: BZA72Z02
Project Desc: Garvey Elevator - RI/FS sampling
Location: Hastings State: Nebraska Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02
Purpose: Compliance Monitoring GPRA PRC: 302DD2C

Monitoring well sampling - OU #02.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

Deg C = Degrees Celsius
NTU = Nephelometric Turbidity Units
SU = Standard Units (pH)
mg/L = Milligrams per Liter
ug/L = Micrograms per Liter
umhos/cm = Micromhos per Centimeter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank) = Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

Project ID: BZA72Z02 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1 -	__	Water	MW-18D		06/15/2010	14:24			06/17/2010
2 -	__	Water	MW-18C		06/15/2010	18:44			06/17/2010
3 -	__	Water	MW-45-D		06/16/2010	16:11			06/18/2010
3 -	FD	Water	MW-45-D/Field Duplicate of sample 3		06/16/2010				06/18/2010
5 -	__	Water	MW-45-C		06/16/2010	17:47			06/18/2010
5 -	FD	Water	MW-45-C/Field Duplicate of sample 5		06/16/2010	17:47			06/18/2010
6 -	__	Water	MW-46-D1		06/17/2010	09:55			06/18/2010
7 -	__	Water	MW-46-D2		06/17/2010	12:08			06/18/2010
8 -	__	Water	MW-42-E		06/17/2010	18:06			06/22/2010
9 -	__	Water	MW-42-D		06/18/2010	09:25			06/22/2010
9 -	FD	Water	MW-42-D/Field Duplicate of sample 9		06/18/2010	09:25			06/22/2010
11 -	__	Water	MW-105-D		06/19/2010	12:28			06/22/2010
12 -	__	Water	MW-18A		06/15/2010	16:43			06/17/2010
13 -	__	Water	MW-17D		06/16/2010	10:56			06/17/2010
14 -	__	Water	MW-44-D		06/18/2010	12:48			06/22/2010
15 -	__	Water	MW-44-E		06/18/2010	14:38			06/22/2010
16 -	__	Water	MW-105-A		06/18/2010	17:48			06/22/2010
17 -	__	Water	MW-105-C		06/19/2010	10:08			06/22/2010
18 -	__	Water	MW-12-D		06/19/2010	15:11			06/22/2010
19 -	__	Water	MW-17A		06/16/2010	09:16			06/17/2010
20 -	__	Water	MW-17C		06/16/2010	12:35			06/17/2010
20 -	FD	Water	MW-17C/Field Duplicate of sample 20		06/16/2010	12:35			06/17/2010
21 -	__	Water	MW-12-C		06/19/2010	16:57			06/22/2010
21 -	FD	Water	MW-12-C/Field Duplicate of sample 21		06/19/2010	16:57			06/22/2010
23 -	__	Water	MW-12-A		06/19/2010	17:53			06/22/2010
24 -	__	Water	MW-43-E		06/20/2010	08:46			06/22/2010
25 -	__	Water	MW-43-D		06/20/2010	09:35			06/22/2010
26 -	__	Water	MW-41-D2		06/20/2010	11:20			06/22/2010
27 -	__	Water	MW-41-D1		06/20/2010	12:51			06/22/2010
28 -	__	Water	MW-11A		06/20/2010	15:40			06/22/2010
29 -	__	Water	MW-16-A		06/21/2010	09:00			06/22/2010
30 -	__	Water	MW-16-C		06/21/2010	09:55			06/22/2010
31 -	__	Water	MW-10-B		06/21/2010	11:34			06/22/2010
32 -	__	Water	MW-10-A		06/21/2010	12:20			06/22/2010
33 -	__	Water	MW-106-D		06/21/2010				06/22/2010
34 -	__	Water	MW-104-C		06/21/2010	08:53			06/22/2010
35 -	__	Water	MW-104-D		06/21/2010	09:32			06/22/2010
36 -	__	Water	MW-104-A		06/21/2010	10:33			06/22/2010
37 -	__	Water	MW-14-A		06/21/2010	11:43			06/22/2010
38 -	__	Water	MW-106-A		06/21/2010	16:15			06/22/2010
39 -	__	Water	MW-106-C		06/21/2010				06/22/2010
46 -	FB	Water	LDL VOA Trip Blank sample 1		06/16/2010	16:00			06/17/2010

Project ID: BZA72Z02 Project Desc: Garvey Elevator - RI/FS sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
47 -	FB	Water	LDL VOA Trip Blank sample 2		06/17/2010	14:30			06/18/2010
48 -	FB	Water	LDL VOA Trip Blank sample 3		06/21/2010	09:30			06/22/2010

Analysis	Comments About Results For This Analysis

1 Alkalinity in Water by Titration

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3132.1E

Samples:							
	1-__	2-__	3-__	3-FD	5-__	7-__	8-__
	9-__	9-FD	11-__	12-__	13-__	14-__	15-__
	16-__	17-__	18-__				

Comments:
(N/A)

1 Anions in Water by Ion Chromatography

Lab: Region 7 ESAT Contract Lab (In-House)

Method: Region 7 RLAB Method 3135.12A

Samples:							
	1-__	2-__	3-__	3-FD	5-__	7-__	8-__
	9-__	9-FD	11-__	12-__	13-__	14-__	15-__
	16-__	17-__	18-__				

Comments:
(N/A)

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:							
	1-__	2-__	3-__	3-FD	5-__	5-FD	6-__
	7-__	8-__	9-__	9-FD	11-__	12-__	13-__
	14-__	15-__	16-__	17-__	18-__	19-__	20-__
	20-FD	21-__	21-FD	23-__	24-__	25-__	26-__
	27-__	28-__	29-__	30-__	31-__	32-__	33-__
	34-__	35-__	36-__	37-__	38-__	39-__	

Comments:
(N/A)

1 Methane, Ethane, Ethene in Water by GC/FID

Lab: RASP Contract Lab (Out-Source)

Method: Similar to RECAP SOP for Methane, Ethane, and Ethene (see comments)

Samples:							
	1-__	2-__	3-__	3-FD	5-__	7-__	8-__
	9-__	9-FD	11-__	12-__	13-__	14-__	15-__
	16-__	17-__	18-__				

Comments:
(N/A)

1 NFS or Nonfilterable Solids

Analysis	Comments About Results For This Analysis

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3142.3E

Samples: 1-__ 2-__ 3-__ 3-FD 5-__ 7-__ 8-__
9-__ 9-FD 11-__ 12-__ 13-__ 14-__ 15-__
16-__ 17-__ 18-__

Comments:
Solids, nonfilterable was J-coded in sample 4932-12. Although the analyte in question has been positively identified in the sample, the quantitation is an estimate (J-coded) due to low recovery of this analyte in the laboratory matrix spike (45%: LCL= 55%). The actual concentration for this analyte may be higher than the reported value.

1 Nitrogen, Nitrate+Nitrite in Water

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3133.2H for acidified samples (for total NO3+NO2 analysis).

Samples: 1-__ 2-__ 3-__ 3-FD 5-__ 7-__ 8-__
9-__ 9-FD 11-__ 12-__ 13-__ 14-__ 15-__
16-__ 17-__ 18-__

Comments:

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 2-__ 3-__ 3-FD 5-__ 5-FD 6-__
7-__ 8-__ 9-__ 9-FD 11-__ 12-__ 13-__
14-__ 15-__ 16-__ 17-__ 18-__ 19-__ 20-__
20-FD 21-__ 21-FD 23-__ 24-__ 25-__ 26-__
27-__ 28-__ 29-__ 30-__ 31-__ 32-__ 33-__
34-__ 35-__ 36-__ 37-__ 38-__ 39-__

Comments:
(N/A)

1 TDS or Total Dissolved Solids

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3142.2C

Samples: 1-__ 2-__ 3-__ 3-FD 5-__ 7-__ 8-__
9-__ 9-FD 11-__ 12-__ 13-__ 14-__ 15-__
16-__ 17-__ 18-__

Comments:

Analysis	Comments About Results For This Analysis

(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	3-FD	5-__	5-FD	6-__
7-__	8-__	9-__	9-FD	11-__	12-__	13-__
14-__	15-__	16-__	17-__	18-__	19-__	20-__
20-FD	21-__	21-FD	23-__	24-__	25-__	26-__
27-__	28-__	29-__	30-__	31-__	32-__	33-__
34-__	35-__	36-__	37-__	38-__	39-__	

Comments:
(N/A)

1 Total Dissolved Oxygen in Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	3-FD	5-__	5-FD	6-__
7-__	8-__	9-__	9-FD	11-__	12-__	13-__
14-__	15-__	16-__	17-__	18-__	19-__	20-__
20-FD	21-__	21-FD	23-__	24-__	25-__	26-__
27-__	28-__	29-__	30-__	31-__	32-__	33-__
34-__	35-__	36-__	37-__	38-__	39-__	

Comments:
(N/A)

1 Total Organic Carbon in Water

Lab: RASP Contract Lab (Out-Source)

Method: Similar to EPA SW846 Method 9060 or StandardMethods (20th Edtion) 5310 B, C, or D (see comments)

Samples:						
1-__	2-__	3-__	3-FD	5-__	7-__	8-__
9-__	9-FD	18-__				

Comments:

1 Total Phosphorus in Water, Colorimetric

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3133.4E

Samples:						
1-__	2-__	3-__	3-FD	5-__	7-__	8-__
9-__	9-FD	11-__	12-__	13-__	14-__	15-__

Analysis Comments About Results For This Analysis

Samples: 16-__ 17-__ 18-__

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples:						
1-__	2-__	3-__	3-FD	5-__	5-FD	6-__
7-__	8-__	9-__	9-FD	11-__	12-__	13-__
14-__	15-__	16-__	17-__	18-__	19-__	20-__
20-FD	21-__	21-FD	23-__	24-__	25-__	26-__
27-__	28-__	29-__	30-__	31-__	32-__	33-__
34-__	35-__	36-__	37-__	38-__	39-__	

Comments:
(N/A)

1 VOCs in Water by GC/MS for Low Detection Limits

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples:						
1-__	2-__	3-__	5-__	5-FD	6-__	7-__
8-__	9-__	11-__	12-__	13-__	14-__	15-__
16-__	17-__	18-__	19-__	20-__	20-FD	21-__
21-FD	23-__	24-__	25-__	26-__	27-__	28-__
29-__	30-__	31-__	32-__	33-__	34-__	35-__
36-__	37-__	38-__	39-__	46-FB	47-FB	48-FB

Comments:
A dilution was necessary because of high levels of carbon tetrachloride in sample -6 for this analysis. This increased the reporting limits by a factor of 2 times for this sample.

The RPD for bromomethane (36.9%) was above the control limits (30%) on the IC of 6/28/10. Bromomethane was UJ-coded in samples -29 through -39 and -48FB. This analyte was not found in the samples at or above the reporting limit; however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration curve not meeting linearity specifications. The actual reporting limit may be higher than the reported value.

Low recovery was reported for 1,1,2,2-tetrachloroethane-d2 (control limits = 73% - 125%) in sample -1 (71%).
1,2-Dibromo-3-chloropropane and 1,1,2,2-tetrachloroethane were UJ-coded in sample -1. These analytes were not found in the sample at or above the reporting limits; however, the reporting limits are an estimate (UJ-coded) due to low recovery of a surrogate analyte. The actual reporting limits for these analytes may be higher than the reported values.

Analysis	Comments About Results For This Analysis
	A high RPD was calculated for chlorobenzene (16% vs. 13%) in the matrix spike / matrix spike duplicate of sample -16. Chlorobenzene was UJ-coded in sample -16. This analyte was not found in the sample at or above the reporting limit; however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate. The actual reporting limit for this analyte may be higher than the reported value.

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	176	277	203	202
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	13.4	24.4	14.4	14.9
Sulfate	mg/L	22.7	28.9	29.5	30.5
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	4830	7250	5510	5510
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U	2 U	2 U	2 U
Ethene	ug/L	3 U	3 U	3 U	3 U
Methane	ug/L	1 U	1 U	1 U	1 U
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	21.5	4.00	253	72.4
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	7.96	10.9	9.57	9.59
1 pH of Water by Field Measurement					
pH	SU	7.18	6.78	7.13	7.13
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	311	458	357	370
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.45	20.99	19.41	19.41
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.69	2.92	3.30	3.30
1 Total Organic Carbon in Water					
Total Organic Carbon	mg/L	1.0 U	1.4	1.3	1.4
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.165	0.288	0.508	0.456
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	17.2	0.3	9.2	9.2
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	150	5.0 U	
Benzene	ug/L	0.50 U	0.50 U	0.50 U	
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	
Carbon Tetrachloride	ug/L	3.7	11	0.50 U	
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	
1,2-Dibromo-3-Chloropropane	ug/L	0.50 UJ	0.50 U	0.50 U	
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	

Analysis/ Analyte	Units	1-__	2-__	3-__	3-FD
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	
Styrene	ug/L	0.50 U	0.50 U	0.50 U	
1,1,2,2-Tetrachloroethane	ug/L	0.50 UJ	0.50 U	0.50 U	
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	
Toluene	ug/L	0.50 U	0.50 U	0.50 U	
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	

Analysis/ Analyte	Units	5-__	5-FD	6-__	7-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	225			171
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	22.1			12.0
Sulfate	mg/L	43.6			24.5
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	6390	6390	1010	4720
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U			2 U
Ethene	ug/L	3 U			3 U
Methane	ug/L	1 U			1 U
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	256			72.2
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	12.8			6.37
1 pH of Water by Field Measurement					
pH	SU	7.88	7.88	6.91	7.13
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	458			313
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.66	17.66	22.68	23.58
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	6.43	6.43	1.04	0.79
1 Total Organic Carbon in Water					
Total Organic Carbon	mg/L	1.3			1.1
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.350			0.209
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	83.6	83.6	>800	15.8
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	10 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	10 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	250	100
Chlorobenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	4.3	0.83
Chloromethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U

Analysis/ Analyte	Units	5-__	5-FD	6-__	7-__
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	10 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	10 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	1.0 U	0.50 U

Analysis/ Analyte	Units	8-__	9-__	9-FD	11-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	159	183	181	155
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	11.6	20.0	19.9	8.9
Sulfate	mg/L	18.2	24.0	24.0	19.2
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	4250	5280	5280	4050
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U	2 U	2 U	2 U
Ethene	ug/L	3 U	3 U	3 U	3 U
Methane	ug/L	1 U	1 U	1 U	1 U
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	12.4	3.15	28.2	14.2
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	5.79	9.65	9.52	4.08
1 pH of Water by Field Measurement					
pH	SU	6.98	6.66	6.66	7.11
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	279	350	345	259
1 Temperature of Water by Field Measurement					
Temperature	Deg C	19.54	15.86	15.86	22.52
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.77	3.94	3.94	2.74
1 Total Organic Carbon in Water					
Total Organic Carbon	mg/L	1.3	1.7	1.3	
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.154	0.142	0.144	0.171
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	16.5	0.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U		5.0 U
Benzene	ug/L	0.50 U	0.50 U		0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U		0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U		0.50 U
Bromoform	ug/L	0.50 U	0.50 U		0.50 U
Bromomethane	ug/L	0.50 U	0.50 U		0.50 U
2-Butanone	ug/L	5.0 U	5.0 U		5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U		0.50 U
Carbon Tetrachloride	ug/L	52	14		23
Chlorobenzene	ug/L	0.50 U	0.50 U		0.50 U
Chloroethane	ug/L	0.50 U	0.50 U		0.50 U
Chloroform	ug/L	0.50 U	0.50 U		0.50 U
Chloromethane	ug/L	0.50 U	0.50 U		0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U		0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U		0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U		0.50 U

Analysis/ Analyte	Units	8-__	9-__	9-FD	11-__
1,2-Dibromoethane	ug/L	0.50 U	0.50 U		0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U		0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U		0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U		0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U		0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U		0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U		0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U		0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U		0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U		0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U		0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U		0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U		0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U		0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U		5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U		0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U		0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U		0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U		0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U		0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U		5.0 U
Styrene	ug/L	0.50 U	0.50 U		0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U		0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U		0.50 U
Toluene	ug/L	0.50 U	0.50 U		0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U		0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U		0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U		0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U		0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U		0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U		0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U		0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U		0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U		0.50 U
o-Xylene	ug/L	0.50 U	0.50 U		0.50 U

Analysis/ Analyte	Units	12-__	13-__	14-__	15-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	152	127	146	138
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	22.7	3.2	9.3	5.7
Sulfate	mg/L	22.0	9.9	15.1	11.8
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	4570	2850	3700	3230
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U	2 U	2 U	2 U
Ethene	ug/L	3 U	3 U	3 U	3 U
Methane	ug/L	1 U	1 U	1 U	1 U
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	113 J	42.5	16.4	8.04
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	6.04	1.49	4.59	2.46
1 pH of Water by Field Measurement					
pH	SU	6.88	7.48	6.99	7.22
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	356	187	291	219
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.69	17.58	18.11	17.08
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.77	0.00	2.71	0.99
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.690	0.228	0.174	0.117
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	163	34.1	2.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	9.8	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	12-__	13-__	14-__	15-__
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	16-__	17-__	18-__	19-__
1 Alkalinity in Water by Titration					
Alkalinity, total	mg/L	336	223	173	
1 Anions in Water by Ion Chromatography					
Chloride	mg/L	19.5	27.5	11.1	
Sulfate	mg/L	41.8	36.2	24.6	
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	8050	6690	4680	8420
1 Methane, Ethane, Ethene in Water by GC/FID					
Ethane	ug/L	2 U	2 U	2 U	
Ethene	ug/L	3 U	3 U	3 U	
Methane	ug/L	1 U	1 U	1 U	
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L	33.2	12.2	9.75	
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L	14.0	4.10	6.32	
1 pH of Water by Field Measurement					
pH	SU	8.06	7.16	6.95	6.83
1 TDS or Total Dissolved Solids					
Solids, total dissolved	mg/L	556	424	317	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.43	16.09	21.11	14.11
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.00	0.85	2.49	5.62
1 Total Organic Carbon in Water					
Total Organic Carbon	mg/L			1.3	
1 Total Phosphorus in Water, Colorimetric					
Phosphorus	mg/L	0.324	0.183	0.190	
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	16.5	0.0	20.2	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	97	2.1	1.1
Chlorobenzene	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	1.5	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	16-__	17-__	18-__	19-__
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	20-__	20-FD	21-__	21-FD
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	6410	6410	6280	6280
1 pH of Water by Field Measurement					
pH	SU	7.24	7.24	6.80	6.80
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.55	15.55	19.16	19.16
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.02	0.02	4.44	4.44
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	198	198	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	27	26	26	28
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	20-__	20-FD	21-__	21-FD
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	23-__	24-__	25-__	26-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	9630	4050	5120	3520
1 pH of Water by Field Measurement					
pH	SU	7.06	6.73	6.78	6.88
1 Temperature of Water by Field Measurement					
Temperature	Deg C	18.77	15.57	16.49	17.33
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	4.83	1.70	3.57	2.40
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.00	0.0	3.9	24.2
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	1.2	0.50 U	2.4
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	23-__	24-__	25-__	26-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	27-__	28-__	29-__	30-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	6640	7070	0.917	0.785
1 pH of Water by Field Measurement					
pH	SU	6.96	6.71	6.82	6.79
1 Temperature of Water by Field Measurement					
Temperature	Deg C	16.57	20.44	14.28	15.12
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	0.99	2.91	7.30	11.52
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	0.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 U	0.50 U	0.50 UJ	0.50 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	27-__	28-__	29-__	30-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	31-__	32-__	33-__	34-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	0.799	0.866	3680	4350
1 pH of Water by Field Measurement					
pH	SU	7.03	7.05	7.24	6.68
1 Temperature of Water by Field Measurement					
Temperature	Deg C	15.04	18.72	19.76	16.05
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	9.37	8.17	1.51	2.98
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	6.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	31-__	32-__	33-__	34-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	19
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	35-__	36-__	37-__	38-__
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	3290	9980	8630	7850
1 pH of Water by Field Measurement					
pH	SU	6.83	6.78	6.70	6.98
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.50	20.14	23.62	16.97
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	1.90	3.10	3.25	4.51
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0	0.0	0.0	0.0
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	35-__	36-__	37-__	38-__
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	39-__	46-FB	47-FB	48-FB
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	5520			
1 pH of Water by Field Measurement					
pH	SU	6.76			
1 Temperature of Water by Field Measurement					
Temperature	Deg C	17.54			
1 Total Dissolved Oxygen in Water by Field Measurement					
Dissolved Oxygen	mg/L	5.54			
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	0.0			
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	ug/L	0.50 UJ	0.50 U	0.50 U	0.50 UJ
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

Analysis/ Analyte	Units	39-__	46-FB	47-FB	48-FB
Methylene Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

United States Environmental Protection Agency
Region VII
901 N. 5th Street
Kansas City, KS 66101

Date: __/__/____

Subject: Data Disposition/Sample Release for ASR #: 4932

Project ID: BZA72Z02

Project Description: Garvey Elevator - RI/FS sampling

From: Brian Zurbuchen
SUPR/IANE

To: Kaye Dollmann
ENSV/RLAB

I have received and reviewed the Transmittal of Sample Analysis Results for the above-referenced Analytical Services Request(ASR) and have indicated my findings below by checking one of the boxes for Data Disposition.

I understand all samples will be disposed upon receipt of this form, unless samples are requested to be held. If I do not return this form all samples will be disposed of on ___________________.

☐ "RELEASED" - Read-only to all Region 7 employees and contractors that have R7LIMS "Customer" account. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Project Manager Accessible" - Available on the LAN in R7LIMS for my use only. All Samples may be disposed of upon receipt of this form if not requested to be held.

☐ "Archived" - THIS DATA IS OF A SENSITIVE NATURE. Any future reports must be requested through the laboratory. All samples may be disposed of upon receipt of the form if not requested to be held.

☐ Hold Samples - I have determined that the samples need to be held until ______________, after which time they will be disposed of in accordance with applicable regulations.
The reason for the hold is:

☐ Samples are associated with a legal proceeding.

☐ Question/Concern with data - possible reanalysis requested.

☐ Other:____

GEOTECHNOLOGY INC
FROM THE GROUND UP

May 20, 2010

Report No. A–503789
J017445.01

Mr. Jerrett Domling
HydroGeoLogic, Inc.
6340 Glenwood Street
Overland Park, KS 66202

Re: EP9033.01.62.02

Dear Mr. Domling:

Submitted herewith the test results performed on a sample of aggregate received in our laboratory on May 7, 2010. The sample was tested to determine the physical properties below.

Test To Determine	Method of Test
Sieve Analysis of Fine and Coarse Aggregates	ASTM C136
Maximum / Minimum Index Density and Unit Weight of Soils Using a Vibrating Table	ASTM D4253 / D4254

We trust this is the information you require. Please contact the undersigned if you have any questions regarding this report.

Respectfully submitted,

GEOTECHNOLOGY, INC.
Construction Materials Testing Group

Zachary R. Bullock, CET
CMT Laboratory Manager

ZRB/JAB:zrb

Copies Submitted: (1)

Attachment: Test Results

Material: HTW-40
Date Collected: 1/14/10

SIEVE ANALYSIS OF FINE AGGREGATES – ASTM C136

Sieve Size	Total Passing %
3/4 in.	100.0
1/2 in.	99.3
3/8 in.	96.6
No. 4	80.7
No. 8	43.1
No. 16	3.9
No. 30	0.4
No. 50	0.2
No.100	0.1
No. 200	0.1

MAX / MIN INDEX DENSITY AND UNIT WEIGHT OF SOILS USING A VIBRATORY TABLE – ASTM D 4253/ D4254

Maximum Density (Wet Method)

Wet Density	119.8 lb/ft³
Water Content	8.7%
Dry Density	110.2 lb/ft³

Maximum Density (Dry Method)

Dry Density	113.5 lb/ft³

Minimum Density (Dry Method)

Dry Density	98.6 lb/ft³

SLT 22205

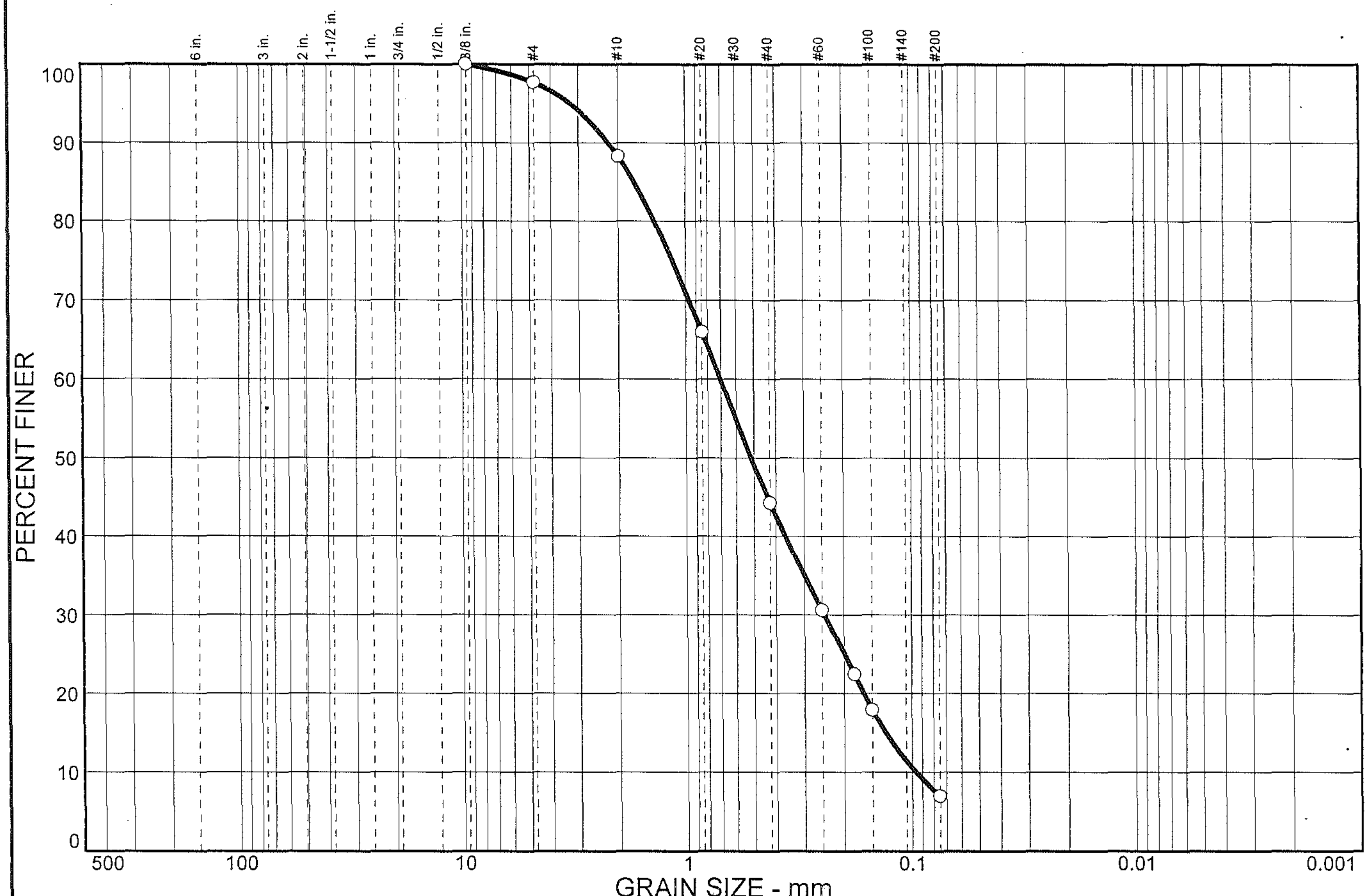
Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Office: (913) 371-0000 Fax: (913) 371-6710
Website: www.aogeotech.com

PROJECT NAME: Garvey Elevator Site
PROJECT LOCATION: Hastings, NE
PROJECT NUMBER: 10-220T
DATE: 6/1/2010

Boring Number	Sample Number	Depth or Elevation	Description	Natural Moisture (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	USCS Class.	% Passing No. 200	Unconfined Compression PSF	%e	% Swell	Remarks
	MW-41 D2	199' - 203'	Poorly graded sand with silt	16.6	106.4				SP-SM	7.0				Please see the attached Grain Size Analysis Test Report.
	MW-43 E	183' - 187'	Poorly graded sand with silt	16.9	110.4				SP-SM	7.0				Please see the attached Grain Size Analysis Test Report.
	MW-45 D	141' - 145'	Poorly graded sand with silt	14.1	116.3				SP-SM	6.6				Please see the attached Grain Size Analysis Test Report.
	MW-45 D	164' - 168'	Poorly graded sand with silt	14.0	112.3				SP-SM	10.4				Please see the attached Grain Size Analysis Test Report.
	MW-12 D	168' - 172'	Well-graded sand with silt	11.7	124.4				SW-SM	7.4				Please see the attached Grain Size Analysis Test Report.
	MW-42 E	197' - 201'	Poorly graded sand with silt	14.8	110.5				SP-SM	6.6				Please see the attached Grain Size Analysis Test Report.
	MW-42 E	208' - 212'	Poorly graded sand with silt	16.3	108.4				SP-SM	10.2				Please see the attached Grain Size Analysis Test Report.
	MW-44 E	203' - 207'	Poorly graded sand with silt	17.9	103.8				SP-SM	6.4				Please see the attached Grain Size Analysis Test Report.

Note: The reported Dry Unit Weight was obtained by remolding the disturbed specimen in a container of a known volume.

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.3	9.4	44.0	37.3	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	97.7		
#10	88.3		
#20	66.0		
#40	44.3		
#60	30.6		
#80	22.5		
#100	17.9		
#200	7.0		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 1.70 D_{60}= 0.704 D_{50}= 0.514
D_{30}= 0.244 D_{15}= 0.131 D_{10}= 0.0957
C_u= 7.36 C_c= 0.88

Classification

USCS= SP-SM AASHTO=

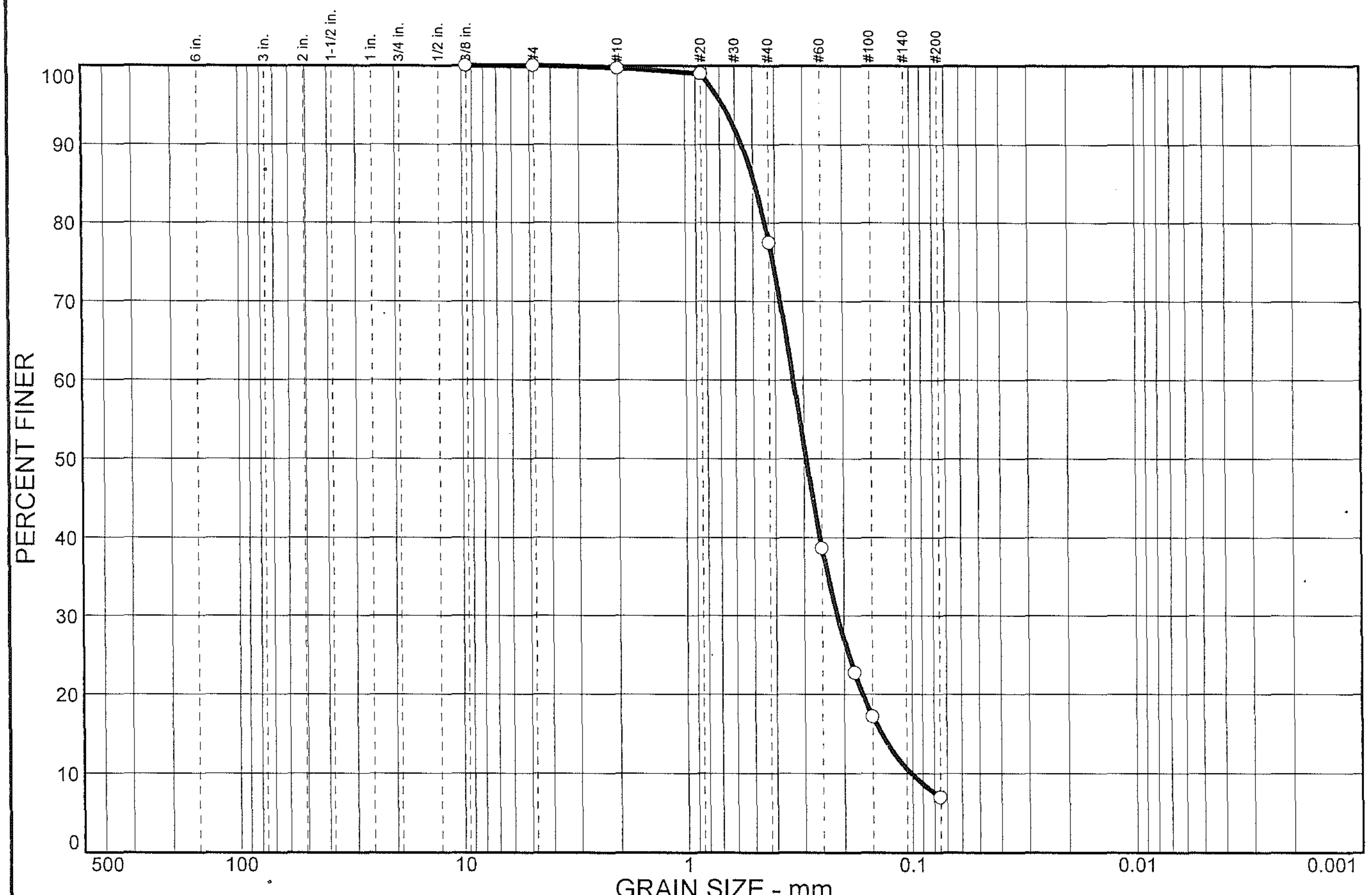
Remarks

Sample No.: MW-41 D2 **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 199' - 203'

GEOTECH **Alpha-Omega Geotech, Inc.**

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.3	22.2	70.5	7.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	100.0		
#10	99.7		
#20	99.0		
#40	77.5		
#60	38.7		
#80	22.8		
#100	17.2		
#200	7.0		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.491 D_{60}= 0.333 D_{50}= 0.293
D_{30}= 0.214 D_{15}= 0.137 D_{10}= 0.101
C_u= 3.30 C_c= 1.36

Classification

USCS= SP-SM AASHTO=

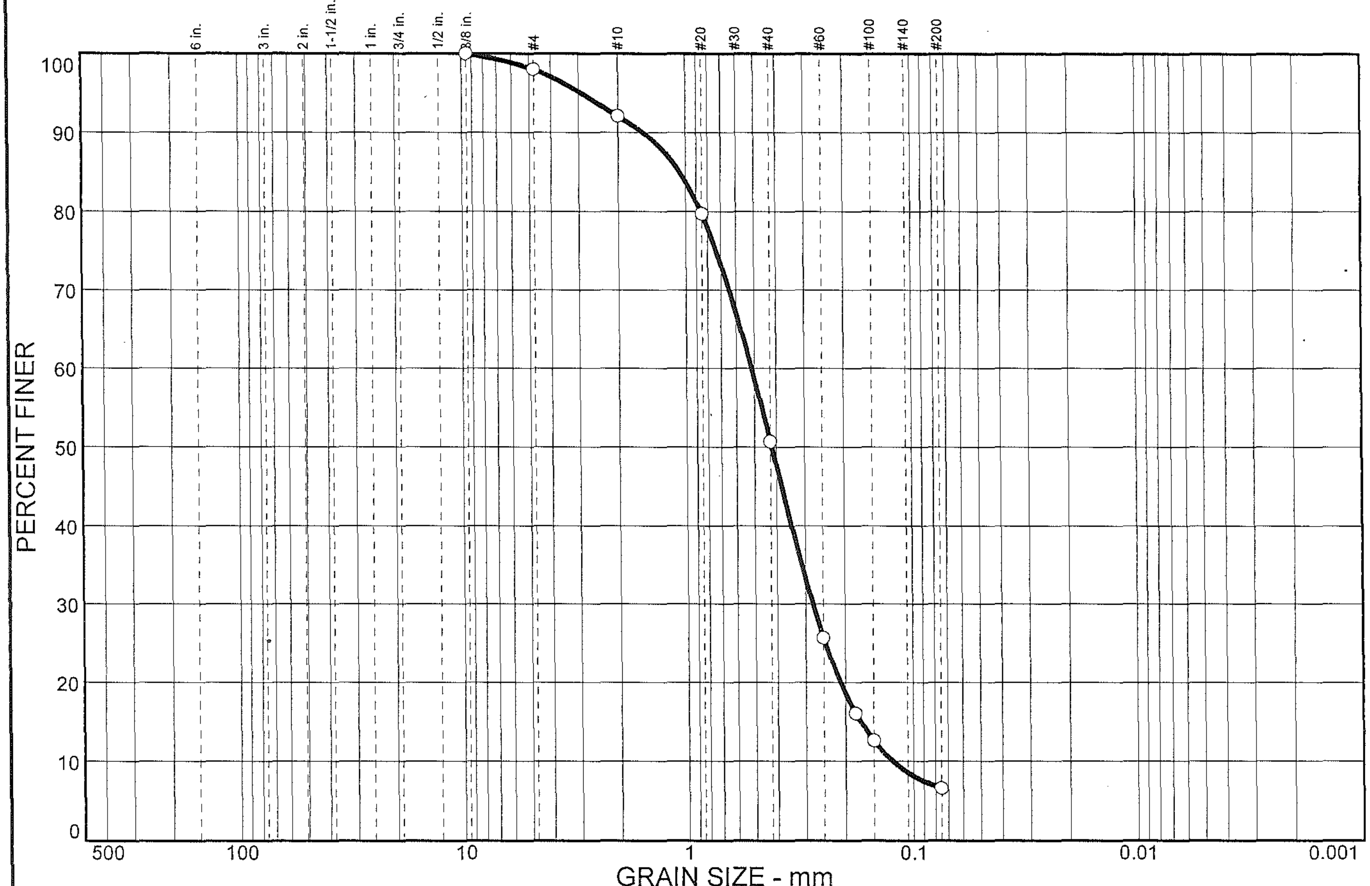
Remarks

Sample No.: MW-43 E **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 183' - 187'

Alpha-Omega Geotech, Inc.

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.0	5.9	41.4	44.1	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	98.0		
#10	92.1		
#20	79.7		
#40	50.7		
#60	25.7		
#80	16.1		
#100	12.6		
#200	6.6		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 1.06 D_{60}= 0.514 D_{50}= 0.419
D_{30}= 0.278 D_{15}= 0.171 D_{10}= 0.123
C_u= 4.17 C_c= 1.22

Classification

USCS= SP-SM AASHTO=

Remarks

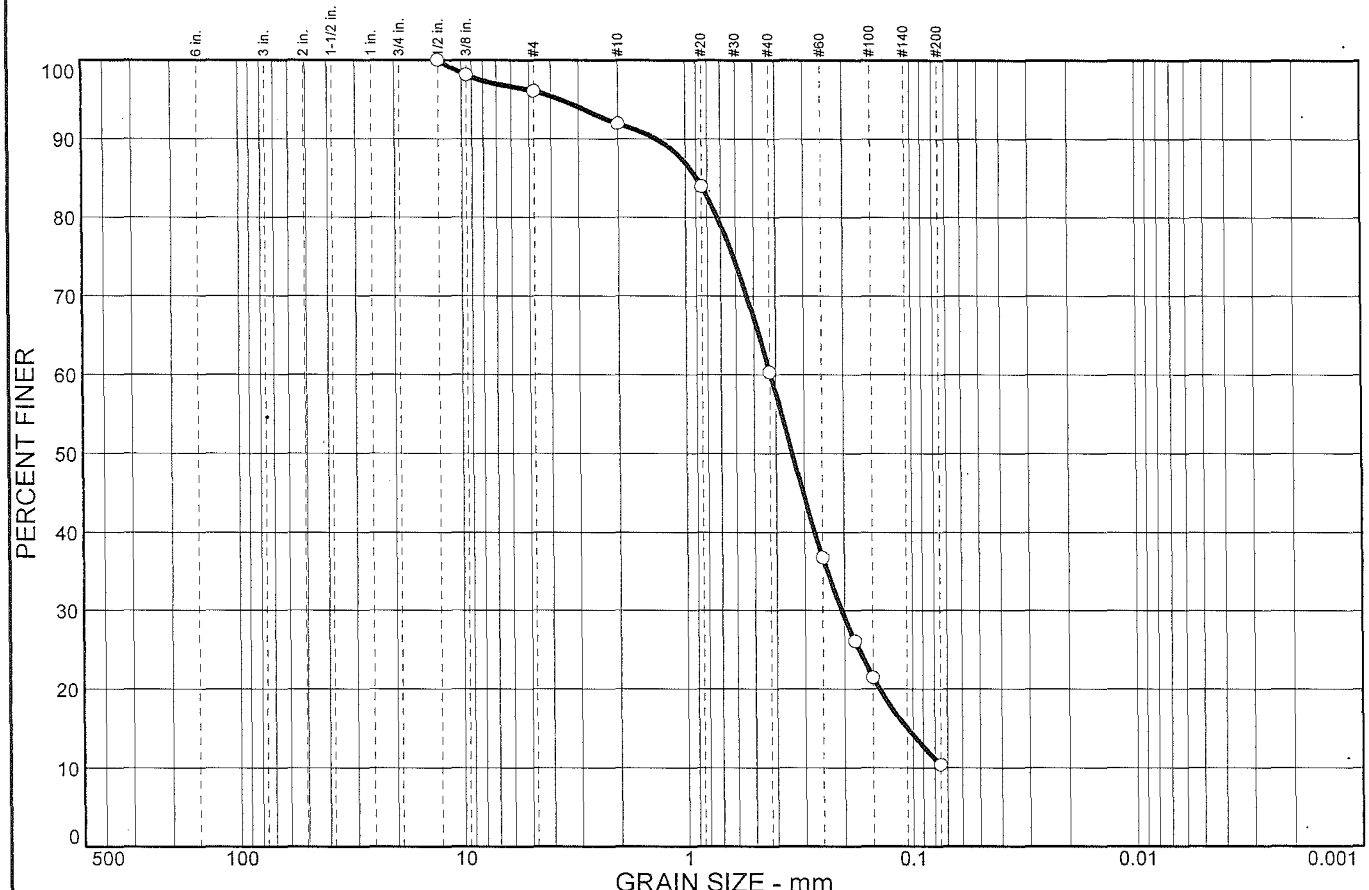
Sample No.: MW-45 D **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 141' - 145'

Alpha-Omega Geotech, Inc.

GEOTECH

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	3.9	4.1	31.7	49.9	10.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.375 in.	98.1		
#4	96.1		
#10	92.0		
#20	84.0		
#40	60.3		
#60	36.8		
#80	26.1		
#100	21.5		
#200	10.4		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.893 D_{60}= 0.422 D_{50}= 0.339
D_{30}= 0.206 D_{15}= 0.106 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO=

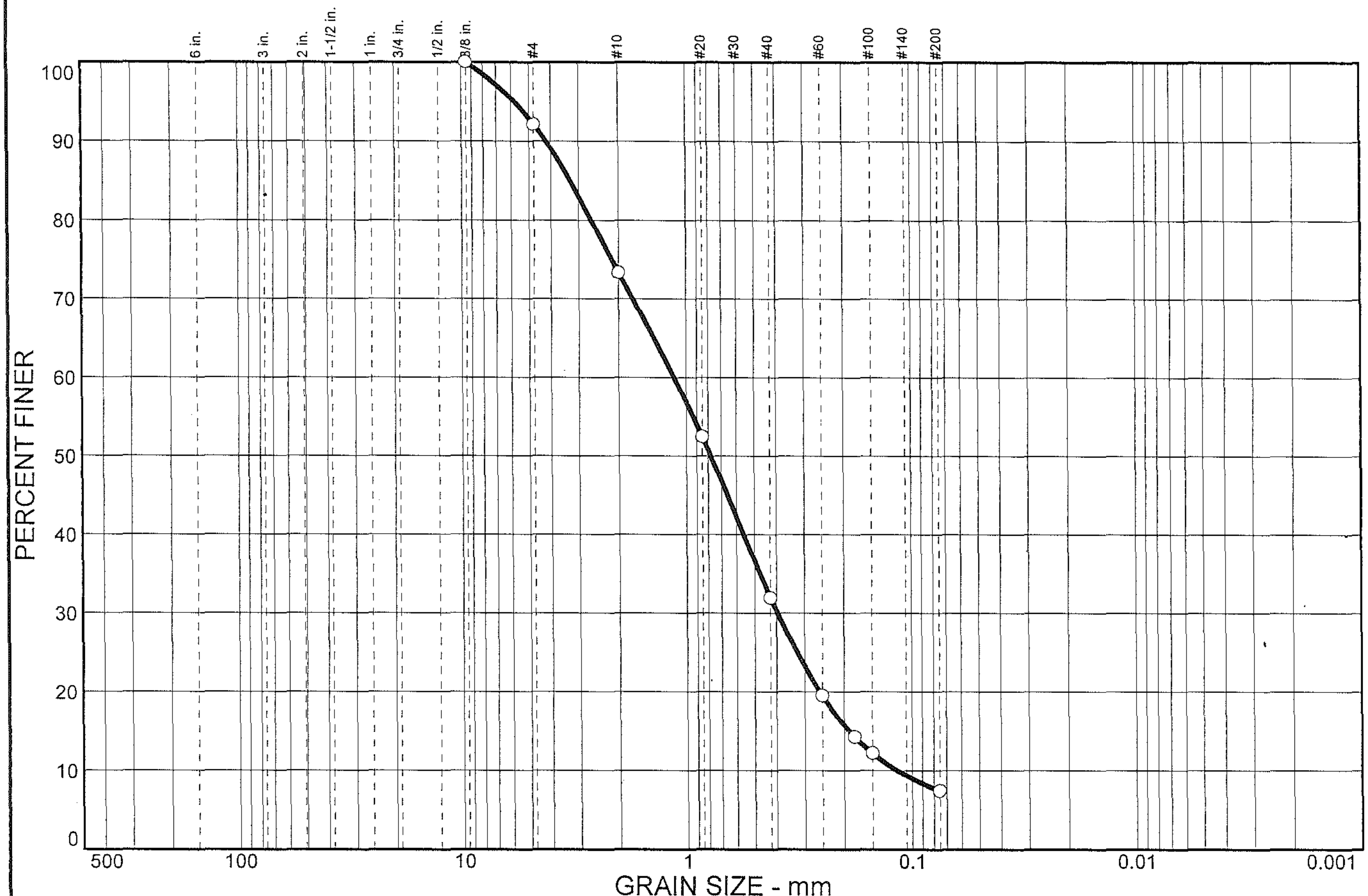
Remarks

Sample No.: MW-45 D **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 164' - 168'

Alpha-Omega Geotech, Inc.

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	7.8	18.8	41.4	24.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	92.2		
#10	73.4		
#20	52.5		
#40	32.0		
#60	19.5		
#80	14.3		
#100	12.2		
#200	7.4		

* (no specification provided)

Material Description

Well-graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 3.28 D_{60}= 1.13 D_{50}= 0.779
D_{30}= 0.395 D_{15}= 0.190 D_{10}= 0.116
C_u= 9.75 C_c= 1.19

Classification

USCS= SW-SM AASHTO=

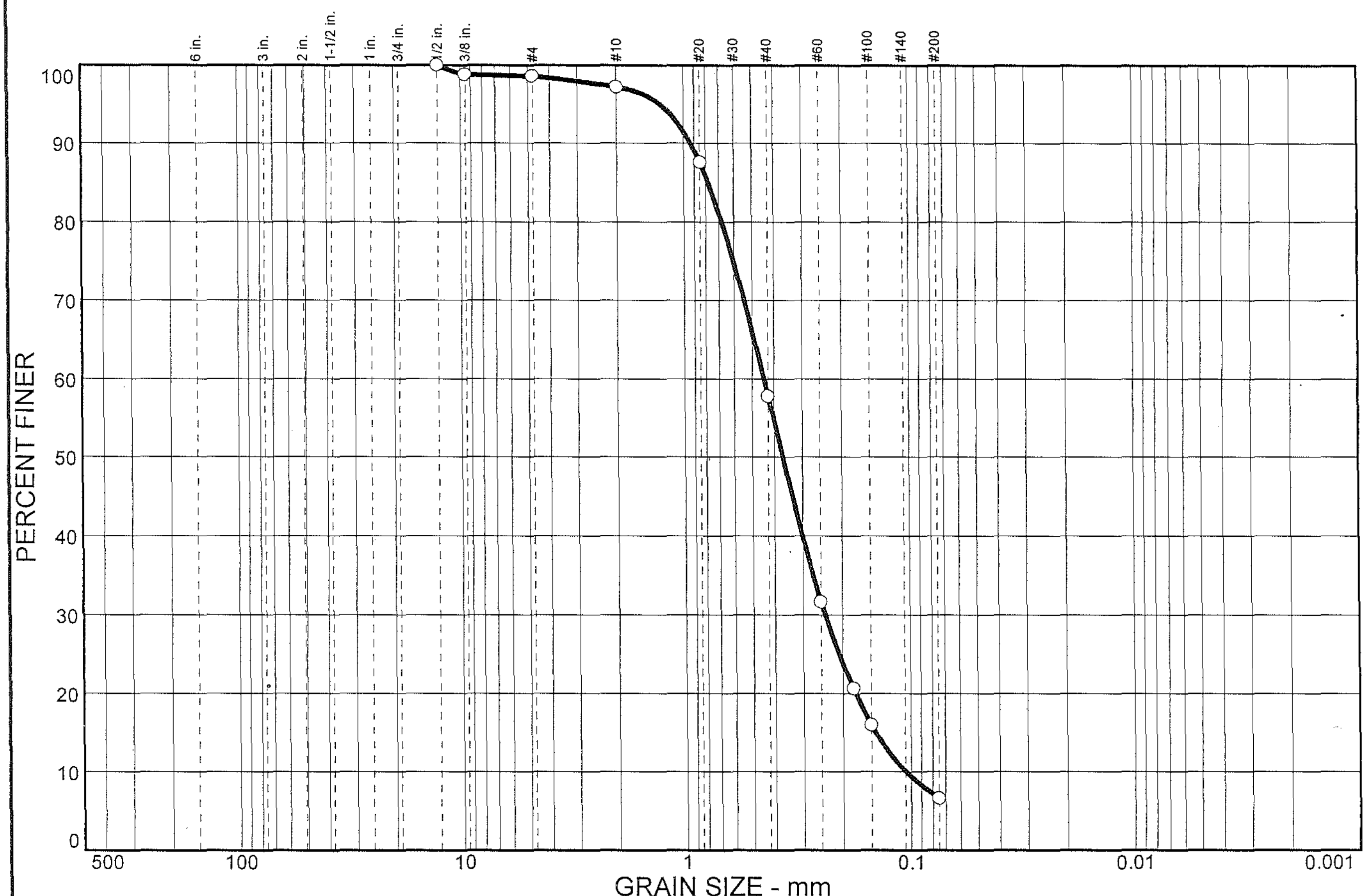
Remarks

Sample No.: MW-12 D **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 168' - 172'

GEOTECH **Alpha-Omega Geotech, Inc.**

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.4	1.4	39.4	51.2	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.375 in.	98.8		
#4	98.6		
#10	97.2		
#20	87.6		
#40	57.8		
#60	31.7		
#80	20.7		
#100	16.0		
#200	6.6		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.781 D_{60}= 0.443 D_{50}= 0.366
D_{30}= 0.239 D_{15}= 0.143 D_{10}= 0.105
C_u= 4.22 C_c= 1.23

Classification

USCS= SP-SM AASHTO=

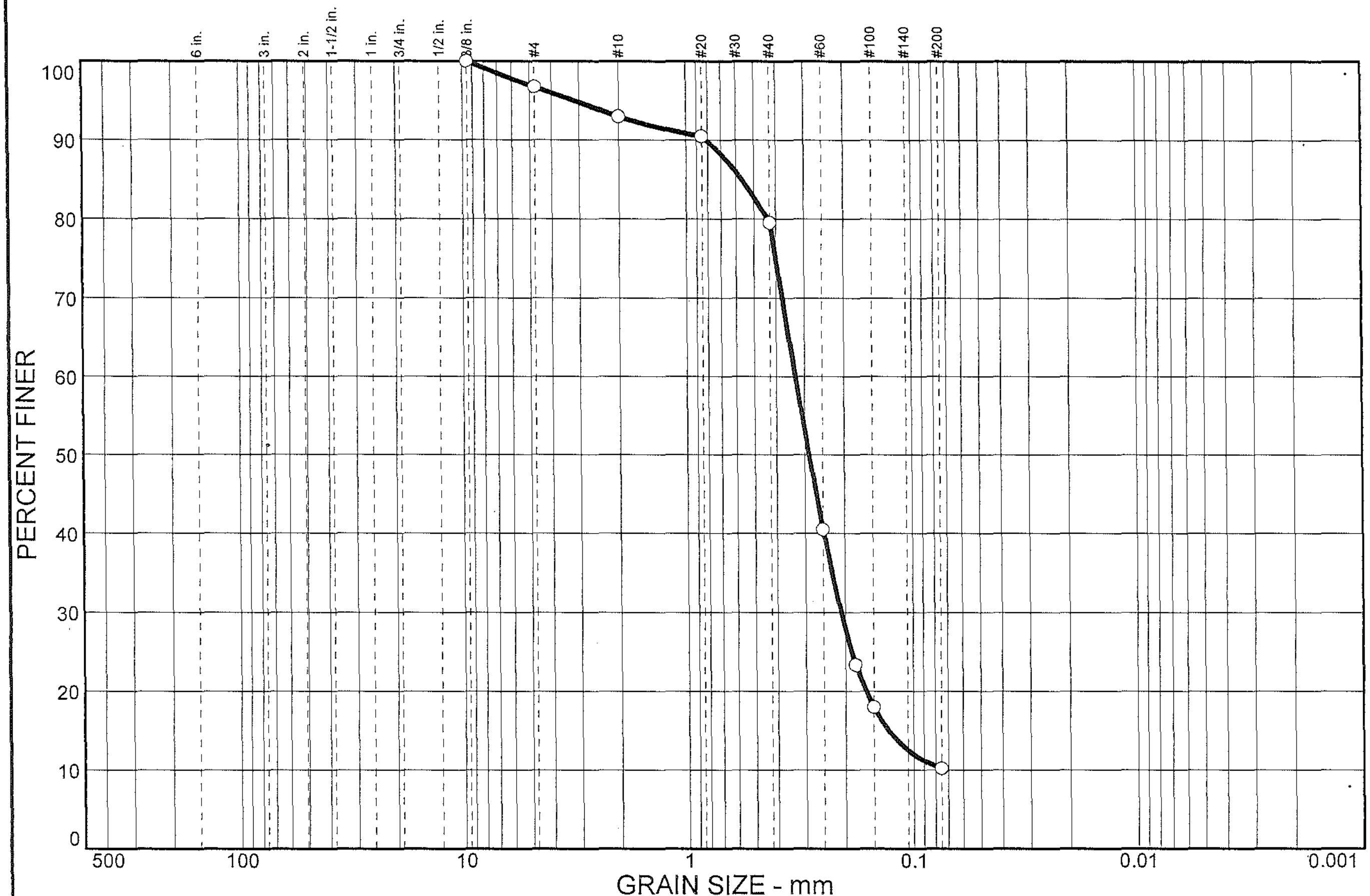
Remarks

Sample No.: MW-42 E **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 197' - 201'

GEOTECH **Alpha-Omega Geotech, Inc.**

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	3.3	3.7	13.5	69.3	10.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	96.7		
#10	93.0		
#20	90.5		
#40	79.5		
#60	40.5		
#80	23.4		
#100	18.0		
#200	10.2		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.565 D_{60}= 0.329 D_{50}= 0.287
D_{30}= 0.209 D_{15}= 0.129 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO=

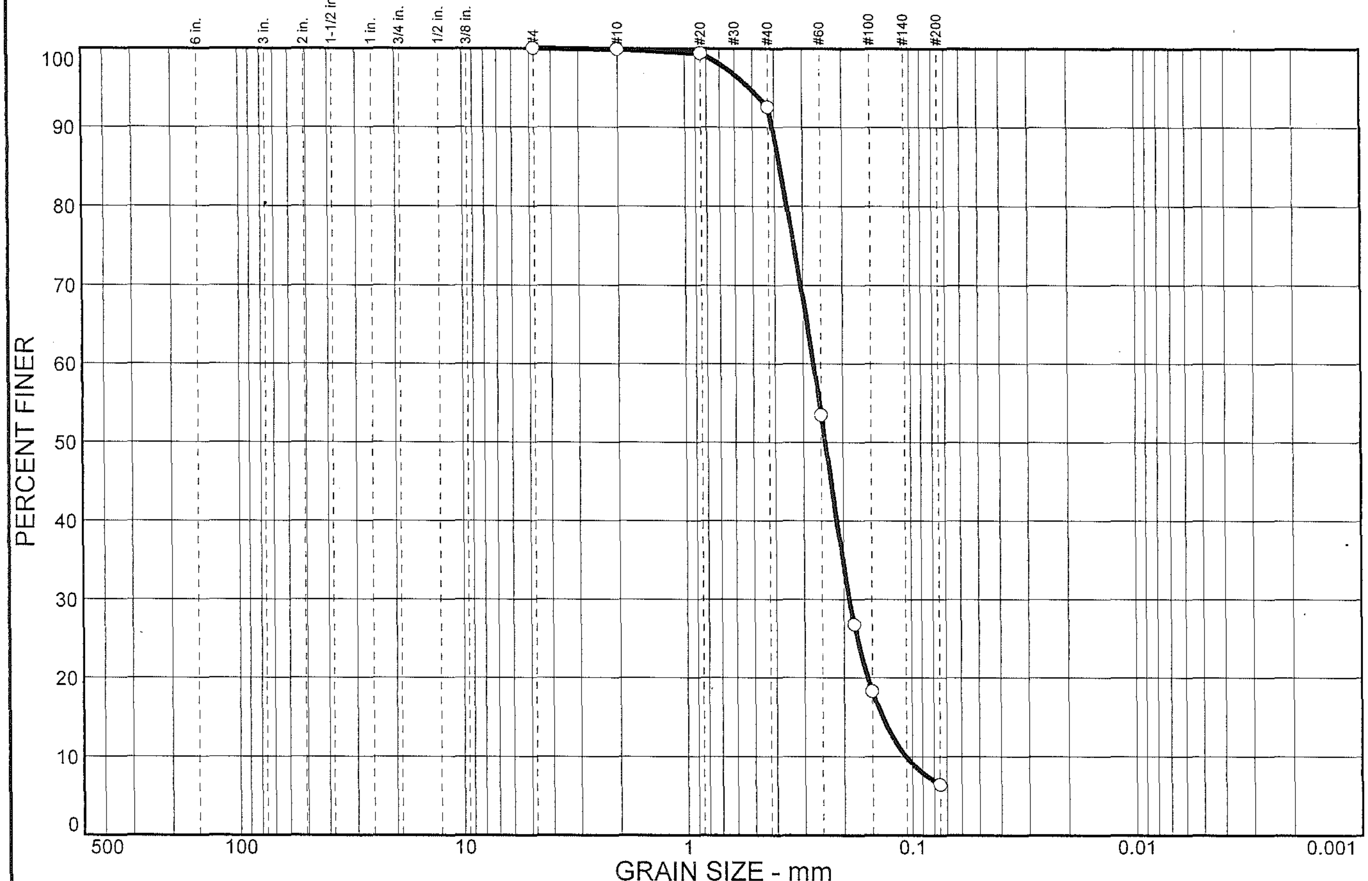
Remarks

Sample No.: MW-42 E **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 208' - 212'

Alpha-Omega Geotech, Inc.

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Grain Size Analysis ASTM C136 & C117



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	7.3	86.2	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.9		
#20	99.4		
#40	92.6		
#60	53.5		
#80	26.8		
#100	18.3		
#200	6.4		

* (no specification provided)

Material Description

Poorly graded sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.379 D_{60}= 0.270 D_{50}= 0.240
D_{30}= 0.189 D_{15}= 0.135 D_{10}= 0.106
C_u= 2.54 C_c= 1.24

Classification

USCS= SP-SM AASHTO=

Remarks

Sample No.: MW-44 E **Source of Sample:** **Date:** 5/25/2010
Location: **Elev./Depth:** 203' - 207'

Alpha-Omega Geotech, Inc.

Client: HGL
Project: Garvey Elevator Site
Project No: 10-220T **Figure** 1 of 1

Porosity Calculations

Sample Number	Dry Unit Weight (pcf)	Specific Gravity	Porosity
MW-41D1: 199'-203'	106.4	2.64	0.35
MW-43E: 183'-187'	110.4	2.64	0.33
MW-45D: 141'-145'	116.3	2.64	0.29
MW-45D: 164'-168'	112.3	2.64	0.32
MW-12D: 168'-172'	124.4	2.64	0.24
MW-42E: 197'-201'	110.5	2.64	0.33
MW-42E: 208'-212'	108.4	2.64	0.34
MW-44E: 203'-207'	103.8	2.64	0.37

pcf = pounds per square foot

Porosity = 1 - (Dry Unit Wt. of soil/(Unit Wt. of Water x Specific Gravity**)

*Unit weight of water is 62.4 pcf at 4°Celsius

**Specific Gravity value is 2.64. This is an average specific gravity for poorly-graded sand with silt.

HAPSITE GC/MS Screening Level Analyses - Garvey Elevator, Hastings, NE
(all results in ppb)

Sample Number	Trichloro-methane	Carbon Tetrachloride	Comments
Irrigation Well east of Garvey	1U	14.9	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-130	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-140	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-140FD	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-151	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-160	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-170	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-180	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-190	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-200	1.7	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-147	4.4	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-155	5	1.1	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-165	8	3.2	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-175	5.9	14.7	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-185	1.6	7.3	sample also contains toluene, numerous alcohols and ketones
ML-TS202-GW-195	2.2	2	sample also contains toluene, numerous alcohols and ketones
ML-TS202-GW-195FD	2.2	2.2	sample also contains toluene, numerous alcohols and ketones
ML-TS202-GW-205	1U	3.1	sample also contains toluene, numerous alcohols, ketones and trichloromethane at low levels
ML-TS202-GW-214	1.6	1U	sample also contains toluene, numerous alcohols and ketones
ML-TS205-GW-144	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS205-GW-151	1U	1U	sample also contains toluene
ML-TS205-GW-164	2.4	1U	sample also contains toluene
ML-TS205-GW-174	7.4	1U	sample also contains toluene
ML-TS205-GW-184	5.4	3.1	sample also contains toluene
ML-TS205-GW-194	1.6	13.6	sample also contains toluene
ML-TS205-GW-194FD	1.6	14.9	sample also contains toluene
ML-TS205-GW-204	1.7	45	sample also contains toluene and trichloromethane
ML-TS205-GW-214	12.4	15.5	sample also contains toluene
ML-TS206-GW-144	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS206-GW-151	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS206-GW-164	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS206-GW-174	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS206-GW-174FD	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS206-GW-184	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS206-GW-194	0	1	sample also contains toluene
ML-TS206-GW-204	1U	14.3	sample also contains toluene
ML-TS206-GW-214	1U	1U	sample also contains toluene
ML-TS302-GW-119	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS302-GW-129-133	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS302-GW-139	1U	1U	sample also contains dimethyl ether or ethanol and toluene
ML-TS302-GW-164-168	1U	1U	sample also contains toluene, numerous alcohols and ketones
ML-TS302-GW-174-178	1U	1U	sample also contains toluene, numerous alcohols and ketones
ML-TS302-GW-184-188	1U	1U	sample also contains toluene, numerous alcohols and ketones

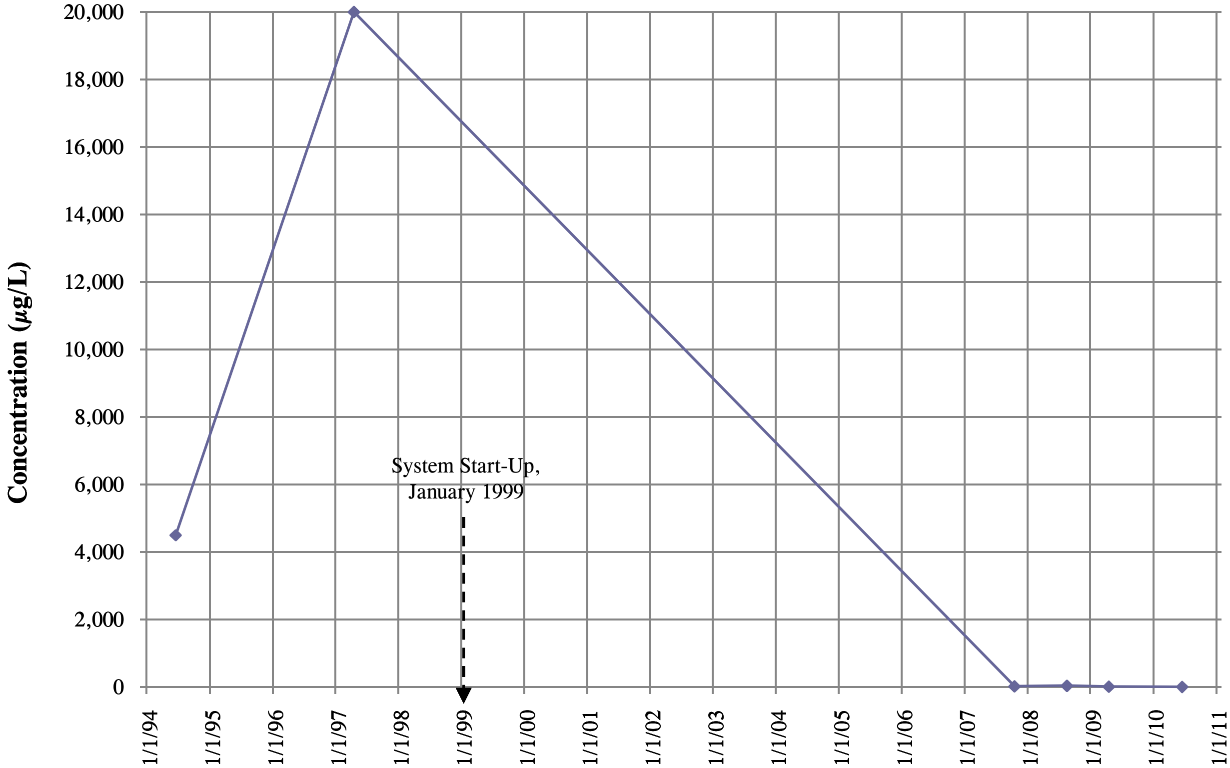
HAPSITE GC/MS Screening Level Analyses - Garvey Elevator, Hastings, NE
(all results in ppb)

Sample Number	Trichloromethane	Carbon Tetrachloride	Comments
ML-TS105-GW-130	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-140	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-140FD	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-151	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-160	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-170	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-180	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-190	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS105-GW-200	1.7	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-147	4.4	1U	
ML-TS202-GW-155	5	1.1	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-165	8	3.2	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-175	5.9	**14.7**	sample also contains dimethyl ether or ethyl alcohol
ML-TS202-GW-185	1.6	**7.3**	sample also contains toluene, numerous alcohols and ketones
ML-TS202-GW-195	2.2	2	sample also contains toluene, numerous alcohols and ketones
ML-TS202-GW-195FD	2.2	2.2	sample also contains toluene, numerous alcohols and ketones
ML-TS202-GW-205	1U	3.1	sample also contains toluene, numerous alcohols, ketones and trichloromethane at low levels
ML-TS202-GW-214	1.6	1U	sample also contains toluene, numerous alcohols and ketones
ML-TS302-GW-119	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS302-GW-129-133	1U	1U	sample also contains dimethyl ether or ethyl alcohol
ML-TS302-GW-139	1U	1U	sample also contains dimethyl ether or ethanol and toluene
ML-TS302-GW-164-168	1U	1U	sample also contains toluene, numerous alcohols and ketones
ML-TS032-GW-174-178	1U	1U	sample also contains toluene, numerous alcohols and ketones
ML-TS302-GW-184-188	1U	1U	sample also contains toluene, numerous alcohols and ketones
Irrigation Well east of Garvey	1U	14.9	sample also contains dimethyl ether or ethyl alcohol

APPENDIX T

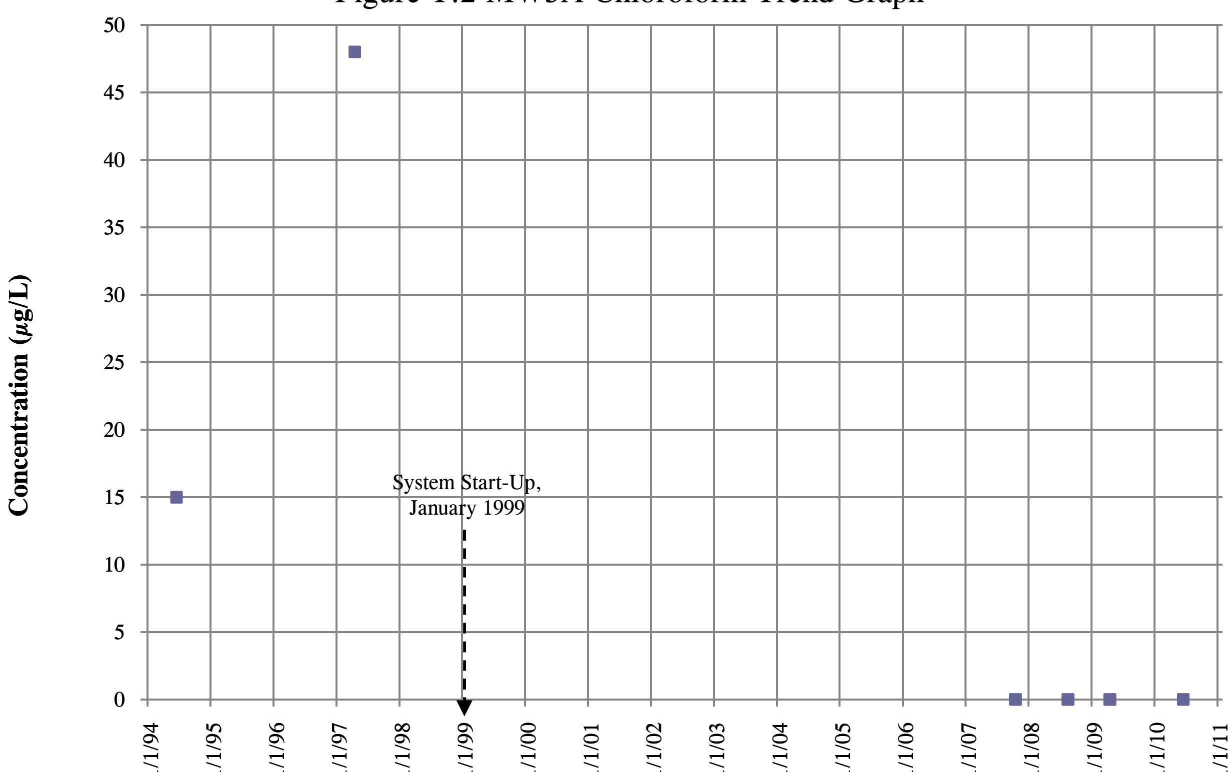
TREND GRAPHS

Figure T.1 MW3A Carbon Tetrachloride Trend Graph



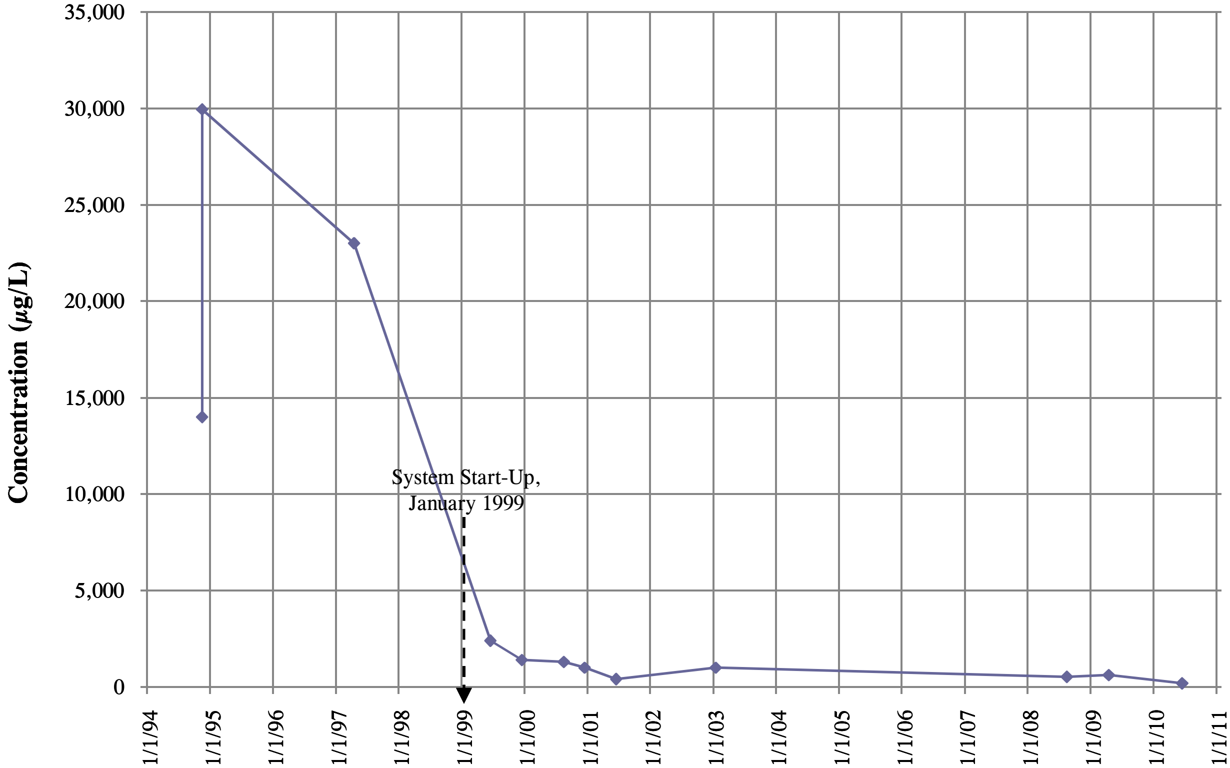
	06/21/94	04/29/97	10/10/07	08/15/08	04/22/09	06/19/10
Carbon Tetrachloride	4,500	20,000	23	41	14	7.4

Figure T.2 MW3A Chloroform Trend Graph



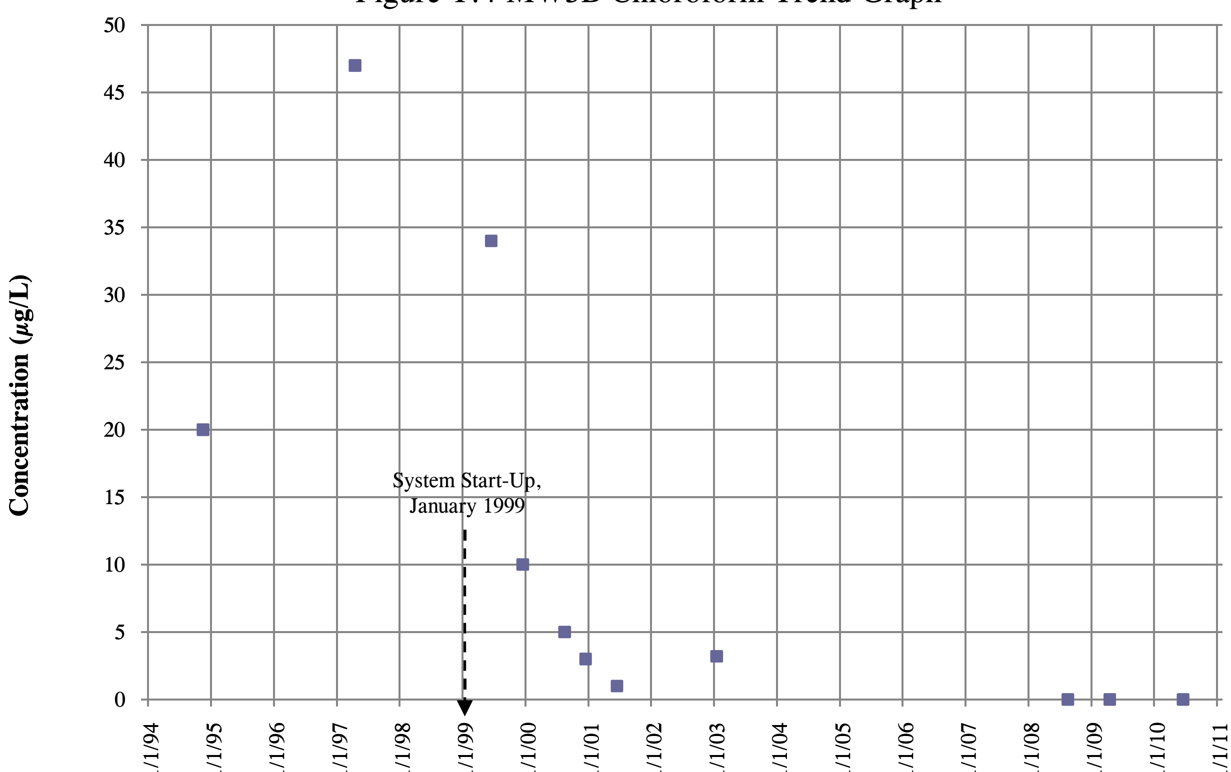
	06/21/94	04/29/97	10/10/07	08/15/08	04/22/09	06/19/10
Chloroform	15	48	0.50 U	5 U	5.0 U	0.50 U

Figure T.3 MW3B Carbon Tetrachloride Trend Graph



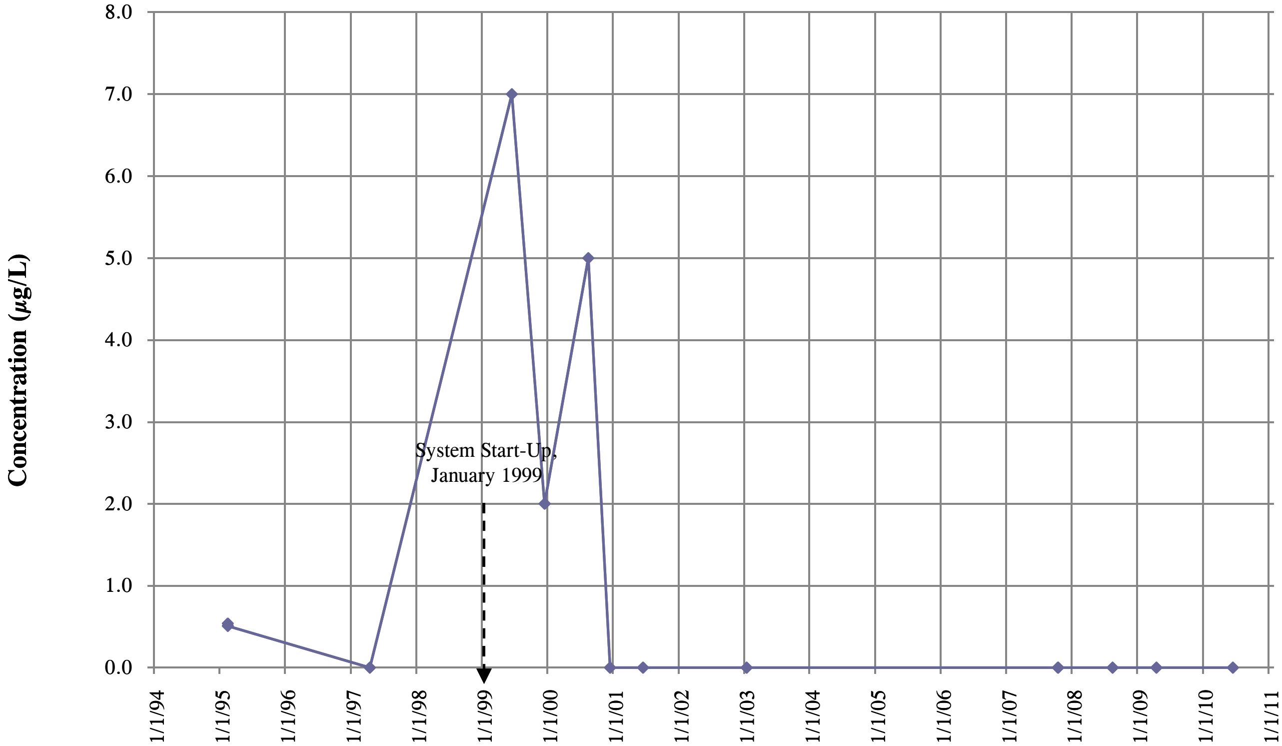
	11/18/94	11/30/94	4/29/97	6/23/99	12/16/99	8/12/00	12/19/00	6/4/01	1/23/03	8/15/08	4/22/09	6/19/10
Carbon Tetrachloride	14,000	29,943	23,000	2,400	1,400	1,300	1,000	410	1,000	530	620	190

Figure T.4 MW3B Chloroform Trend Graph



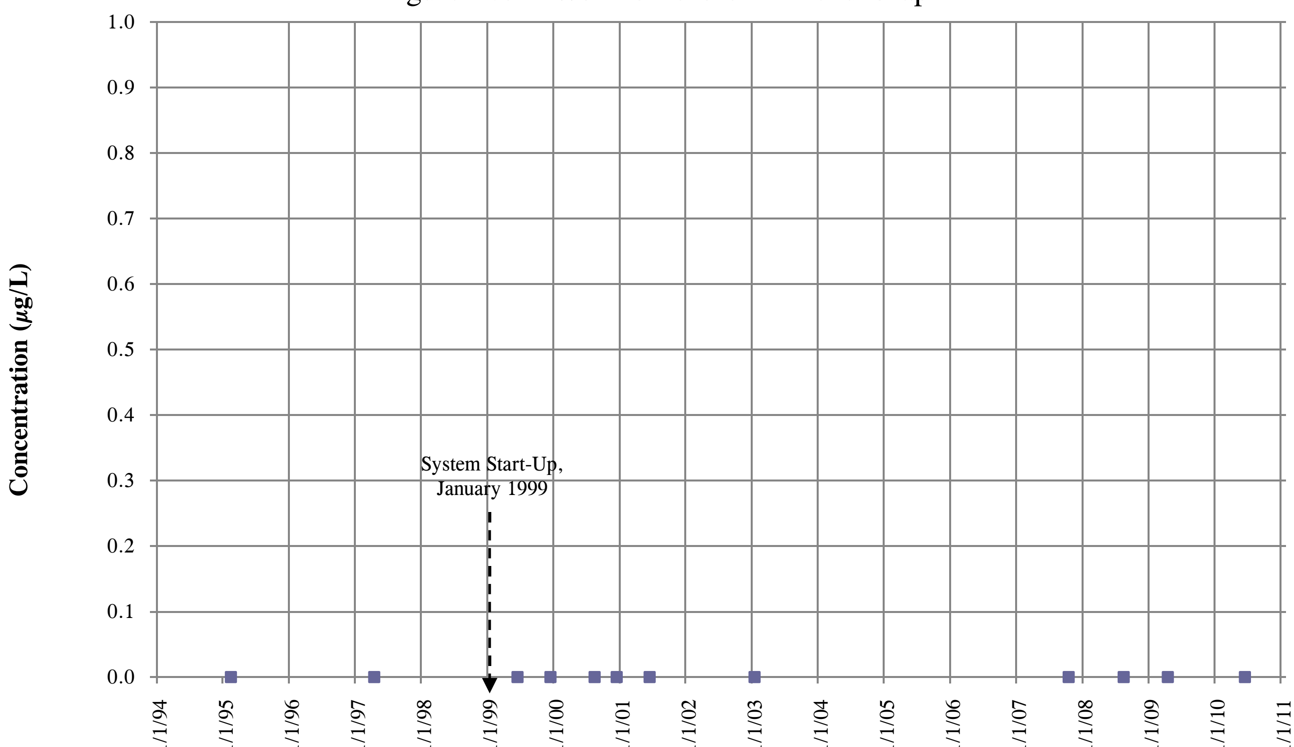
	11/18/94	11/30/94	4/29/97	6/23/99	12/16/99	8/12/00	12/19/00	6/4/01	1/23/03	8/15/08	4/22/09	6/19/10
Chloroform	20	NA	47	34	10	5	3	1	3.2	25 U	5.0 U	1.0 U

Figure T.5 MW3D Carbon Tetrachloride Trend Graph



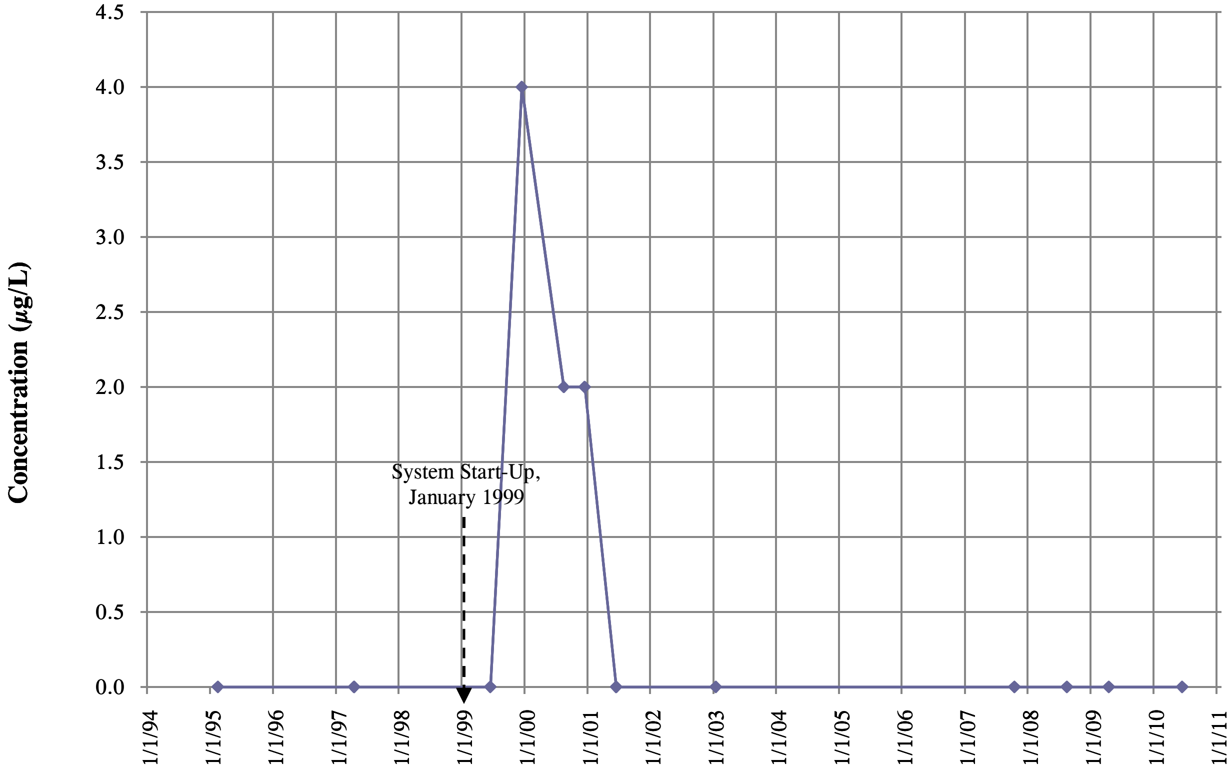
	2/14/95	2/14/95	4/29/97	6/23/99	12/15/99	8/12/00	12/19/00	6/4/01	1/23/03	10/10/07	8/15/08	4/22/09	6/19/10
Carbon Tetrachloride	0.54	0.51	ND	7	2	5	ND	ND	ND	0.5 U	5 U	1.0 U	0.50 U

Figure T.6 MW3D Chloroform Trend Graph



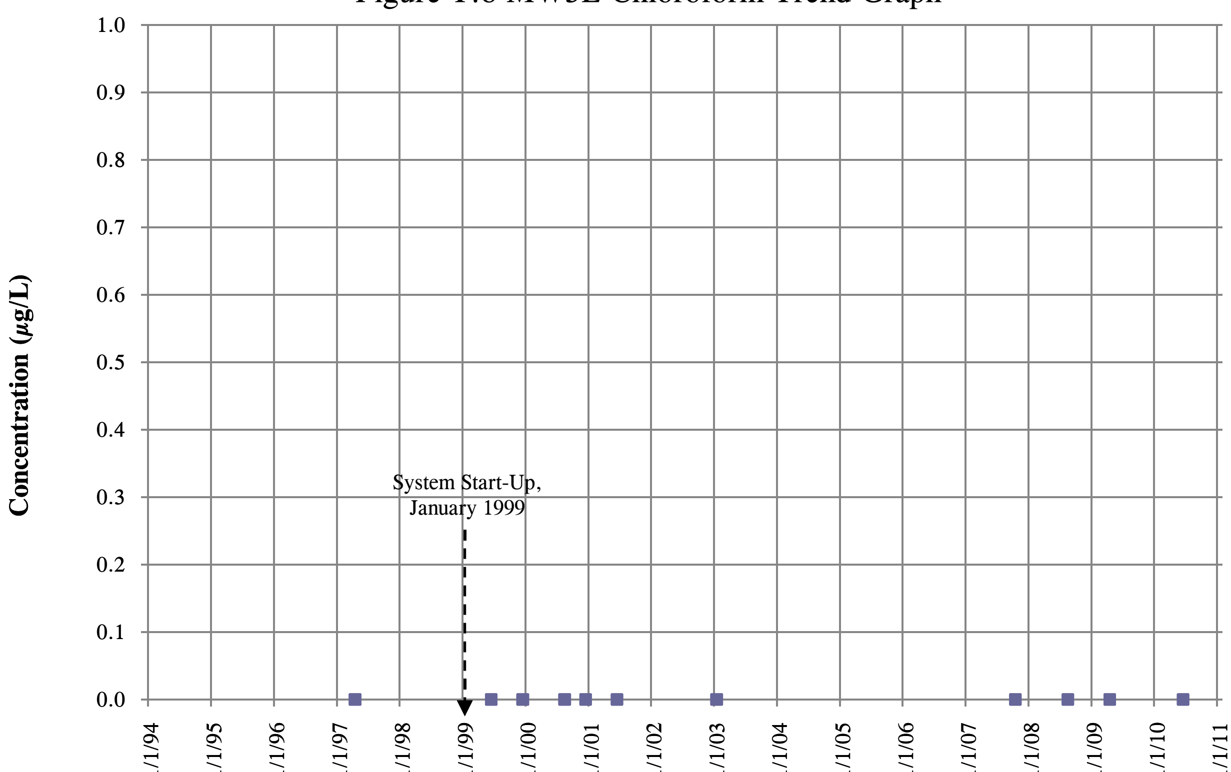
	2/14/95	2/14/95	4/29/97	6/23/99	12/15/99	8/12/00	12/19/00	6/4/01	1/23/03	10/10/07	8/15/08	4/22/09	6/19/10
Chloroform	NA	NA	ND	ND	ND	ND	ND	ND	ND	0.5 U	5 U	1.0 UJ	0.50 U

Figure T.7 MW3E Carbon Tetrachloride Trend Graph



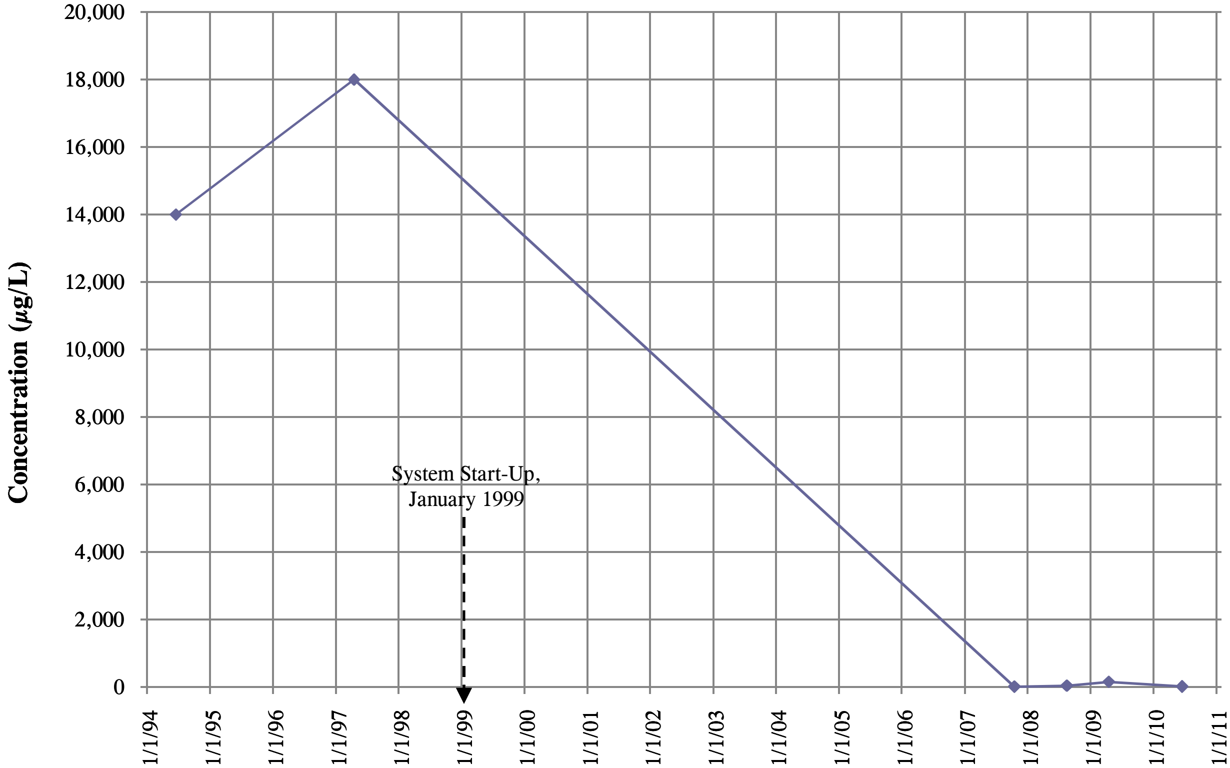
	2/14/95	4/29/97	6/23/99	12/16/99	8/12/00	12/20/00	6/5/01	1/23/03	10/10/07	8/15/08	4/22/09	6/19/10
Carbon Tetrachloride	ND	ND	ND	4	2	2	ND	ND	0.50 U	5 U	1.0 U	0.50 U

Figure T.8 MW3E Chloroform Trend Graph



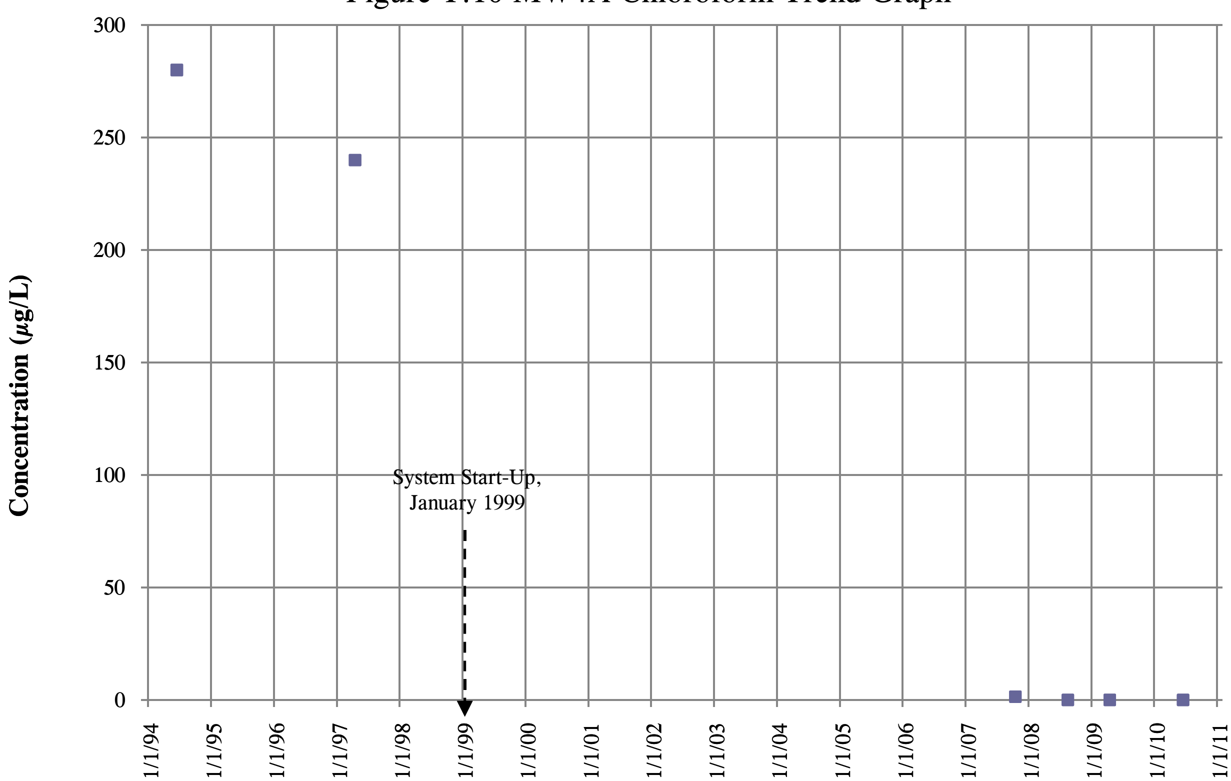
	2/14/95	4/29/97	6/23/99	12/16/99	8/12/00	12/20/00	6/5/01	1/23/03	10/10/07	8/15/08	4/22/09	6/19/10
Chloroform	NA	ND	ND	ND	ND	ND	ND	ND	0.50 U	5 U	1.0 UJ	0.50 U

Figure T.9 MW4A Carbon Tetrachloride Trend Graph



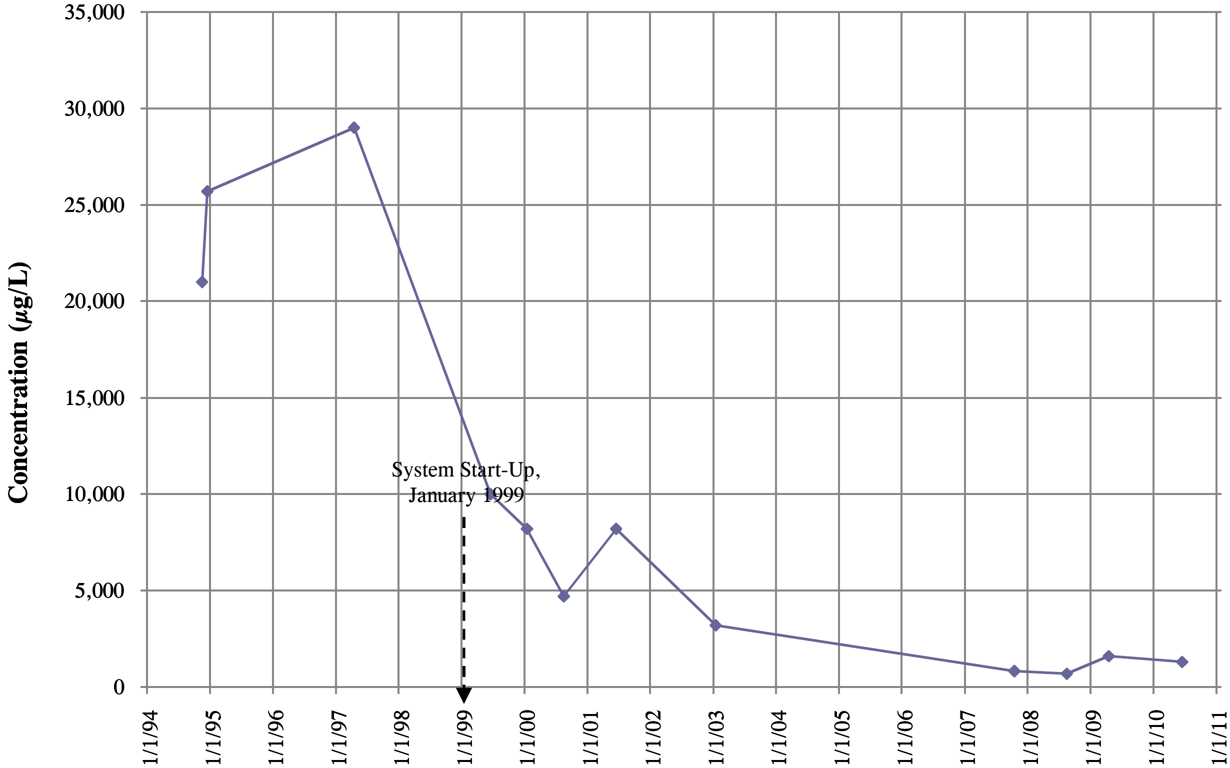
	6/24/94	4/29/97	10/13/07	8/15/08	4/22/09	6/18/10
Carbon Tetrachloride	14,000	18,000	8	35	150	12

Figure T.10 MW4A Chloroform Trend Graph



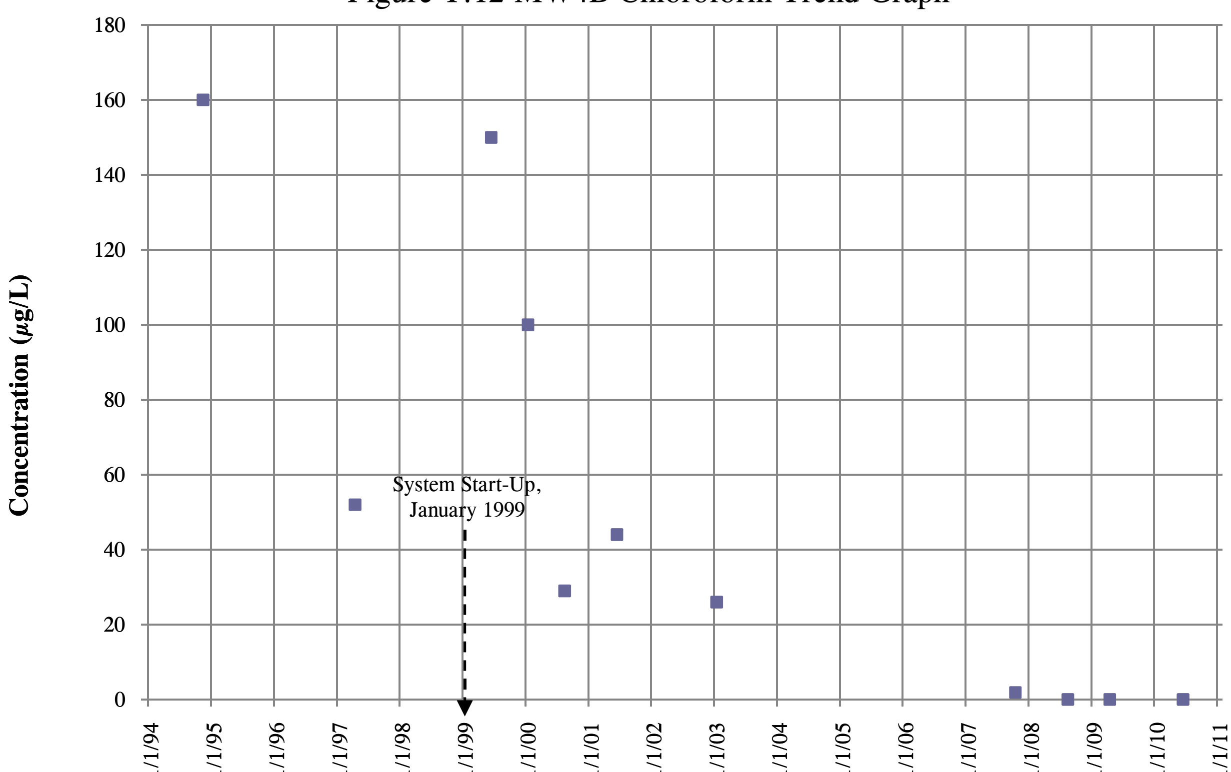
	6/24/94	4/29/97	10/13/07	8/15/08	4/22/09	6/18/10
Chloroform	280	240	1.4	5 U	5.0 U	0.50 U

Figure T.11 MW4B Carbon Tetrachloride Trend Graph



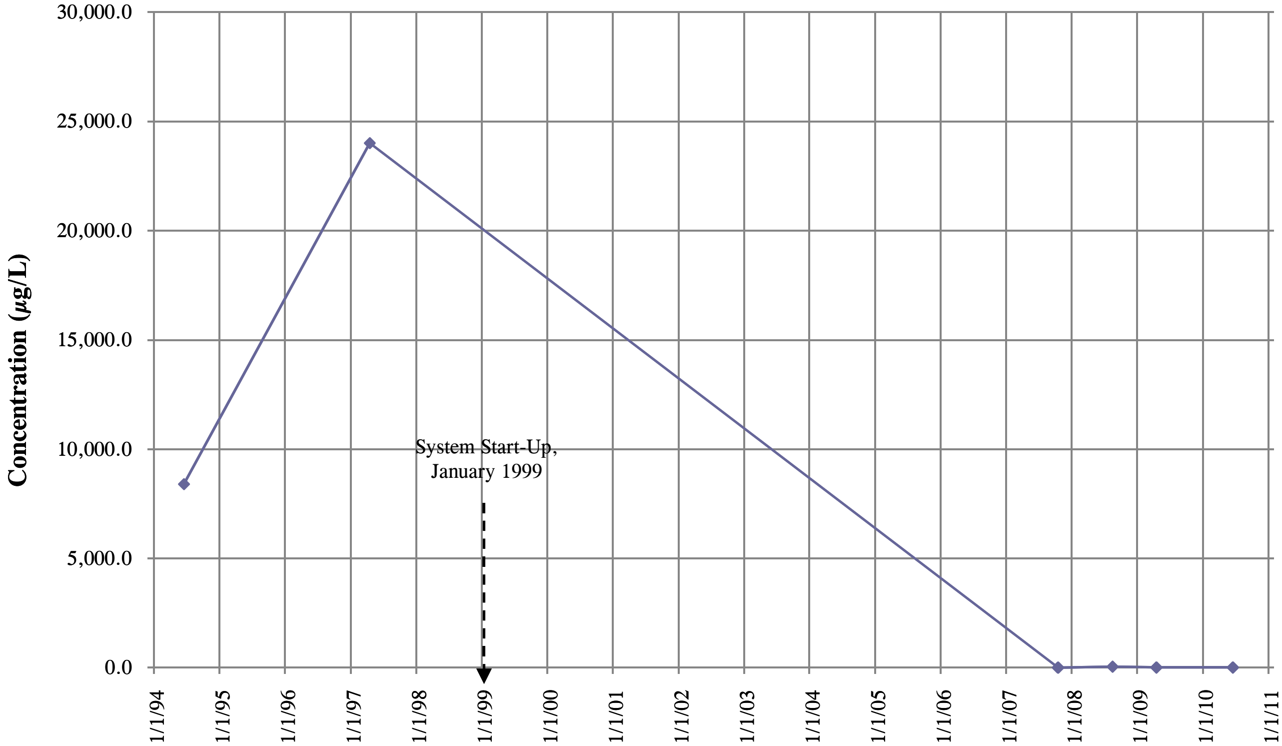
	11/17/94	12/2/94	4/29/97	6/26/99	1/22/00	8/12/00	6/5/01	1/24/03	10/13/07	8/15/08	4/22/09	6/18/10
Carbon Tetrachloride	21,000	25,695	29,000	10,000	8,200	4,700	8,200	3,200	830	690	1600	1300

Figure T.12 MW4B Chloroform Trend Graph



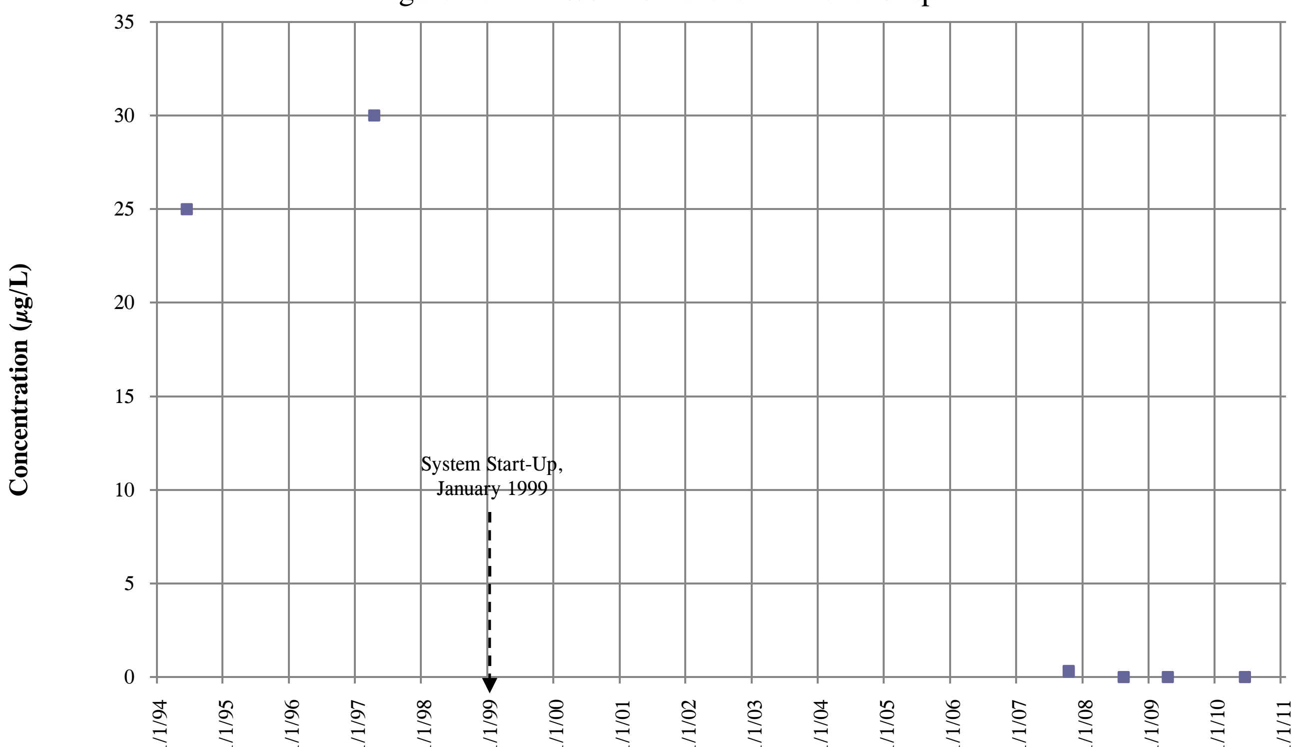
	11/17/94	12/2/94	4/29/97	6/26/99	1/22/00	8/12/00	6/5/01	1/24/03	10/13/07	8/15/08	4/22/09	6/18/10
Chloroform	160	NA	52	150	100	29	44	26	1.9	5 U	5 U	5 U

Figure T.13 MW5A Carbon Tetrachloride Trend Graph



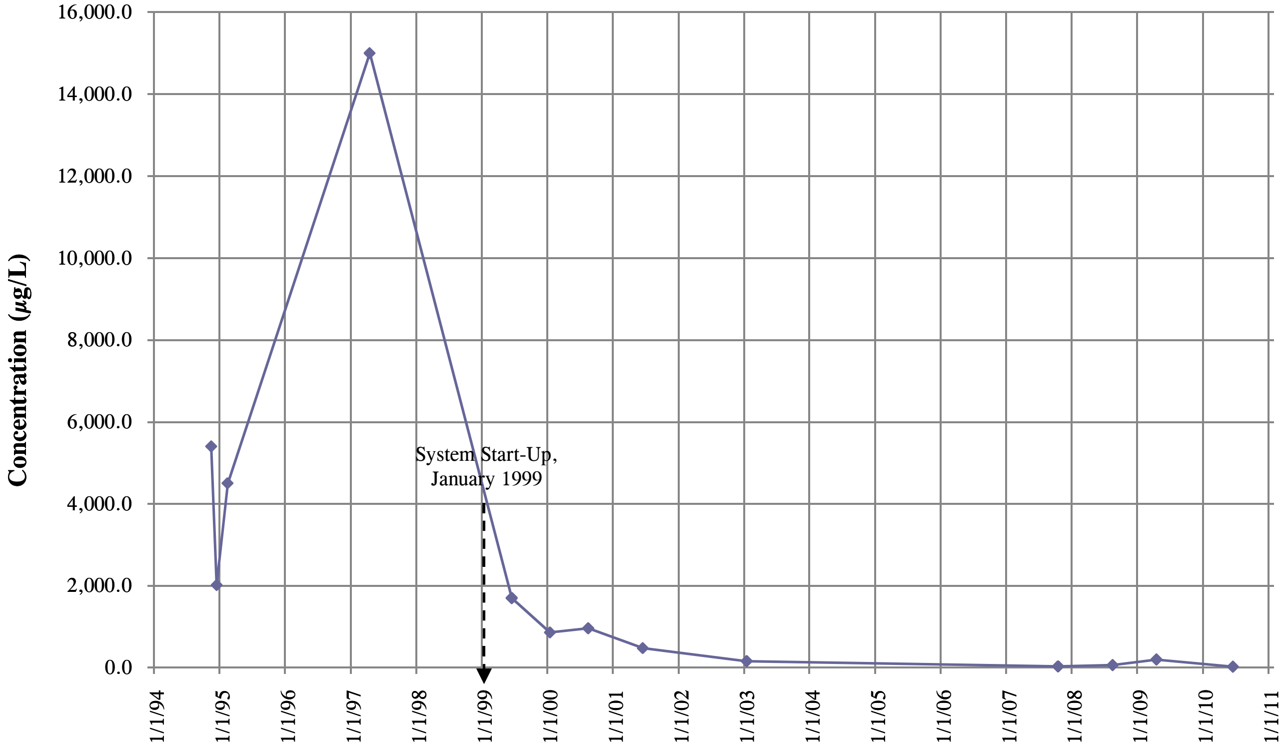
	6/24/94	4/29/97	10/13/07	10/13/07	8/15/08	4/23/09	6/20/10
Carbon Tetrachloride	8,400	24,000	7.9	7.3	51	13	13

Figure T.14 MW5A Chloroform Trend Graph



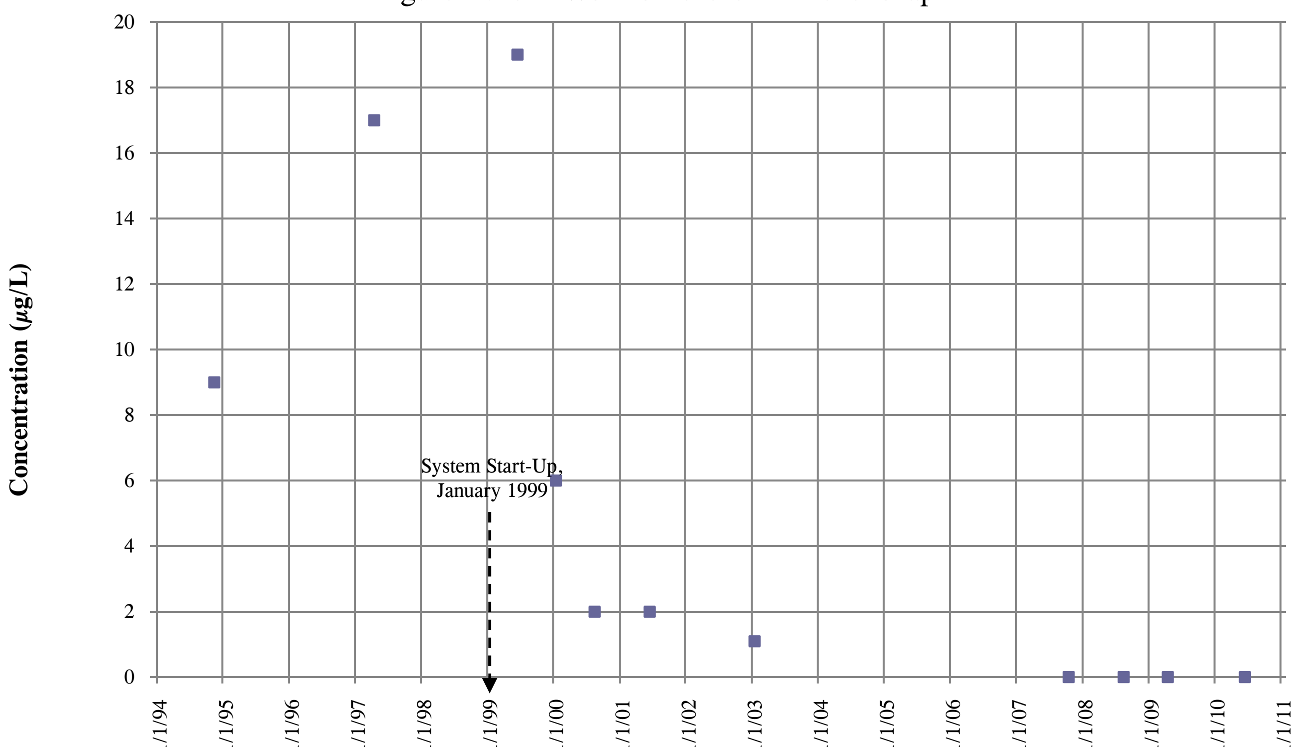
	6/24/94	4/29/97	10/13/07	10/13/07	8/15/08	4/23/09	6/20/10
Chloroform	25	30	0.33	0.3	5 U	5.0 U	0.50 U

Figure T.15 MW5B Carbon Tetrachloride Trend Graph



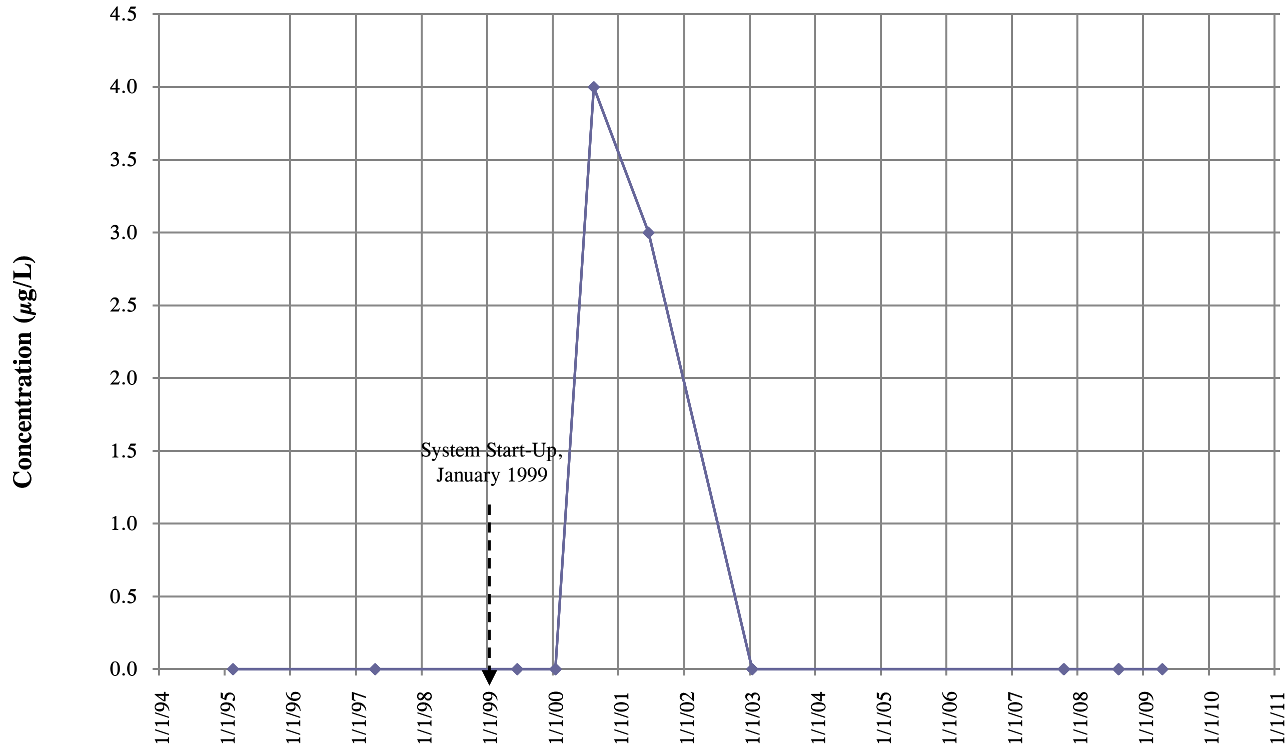
	11/21/94	12/1/94	2/14/95	4/29/97	6/25/99	1/15/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/20/10
Carbon Tetrachloride	5,400	2,017	4,500	15,000	1,700	860	960	480	160	33	64	200	24

Figure T.16 MW5B Chloroform Trend Graph



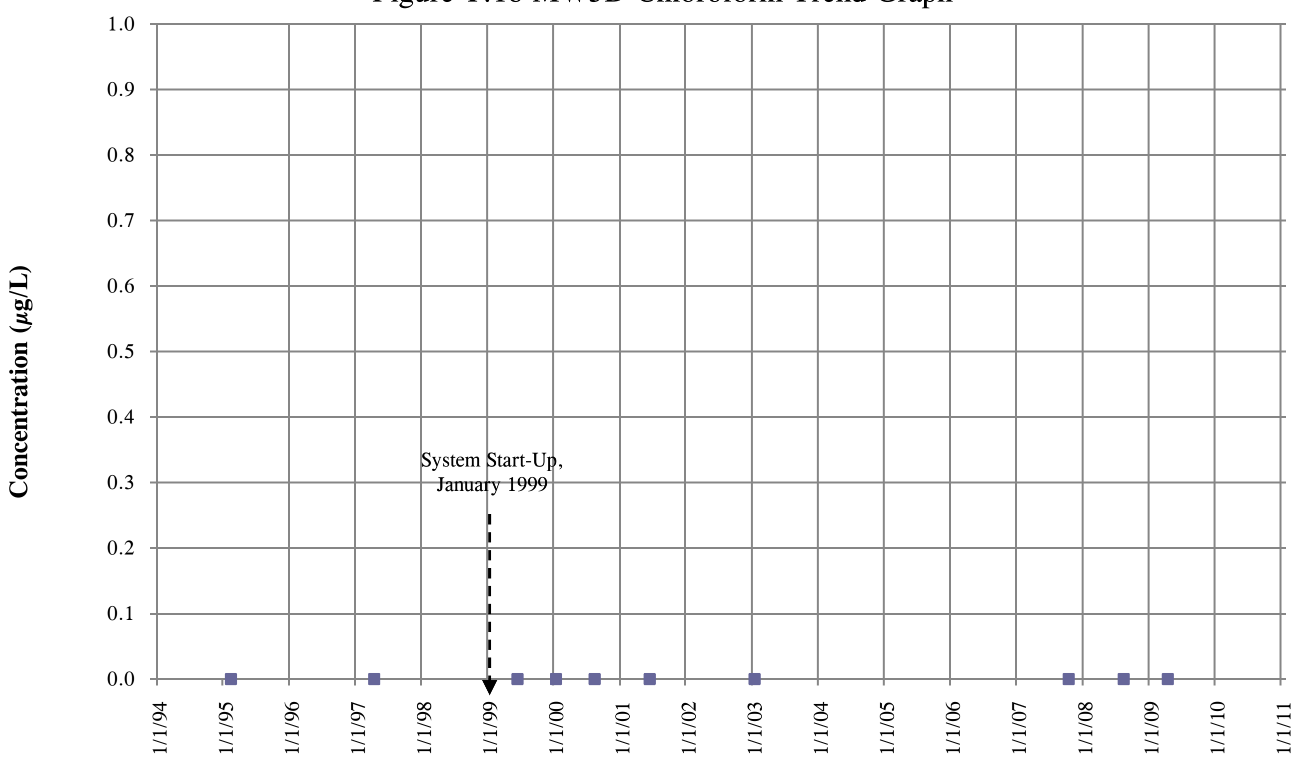
	11/21/94	12/1/94	2/14/95	4/29/97	6/25/99	1/15/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/20/10
Chloroform	9	NA	NA	17	19	6	2	2	1.1	0.5 U	5 U	5.0 U	0.50 U

Figure T.17 MW5D Carbon Tetrachloride Trend Graph



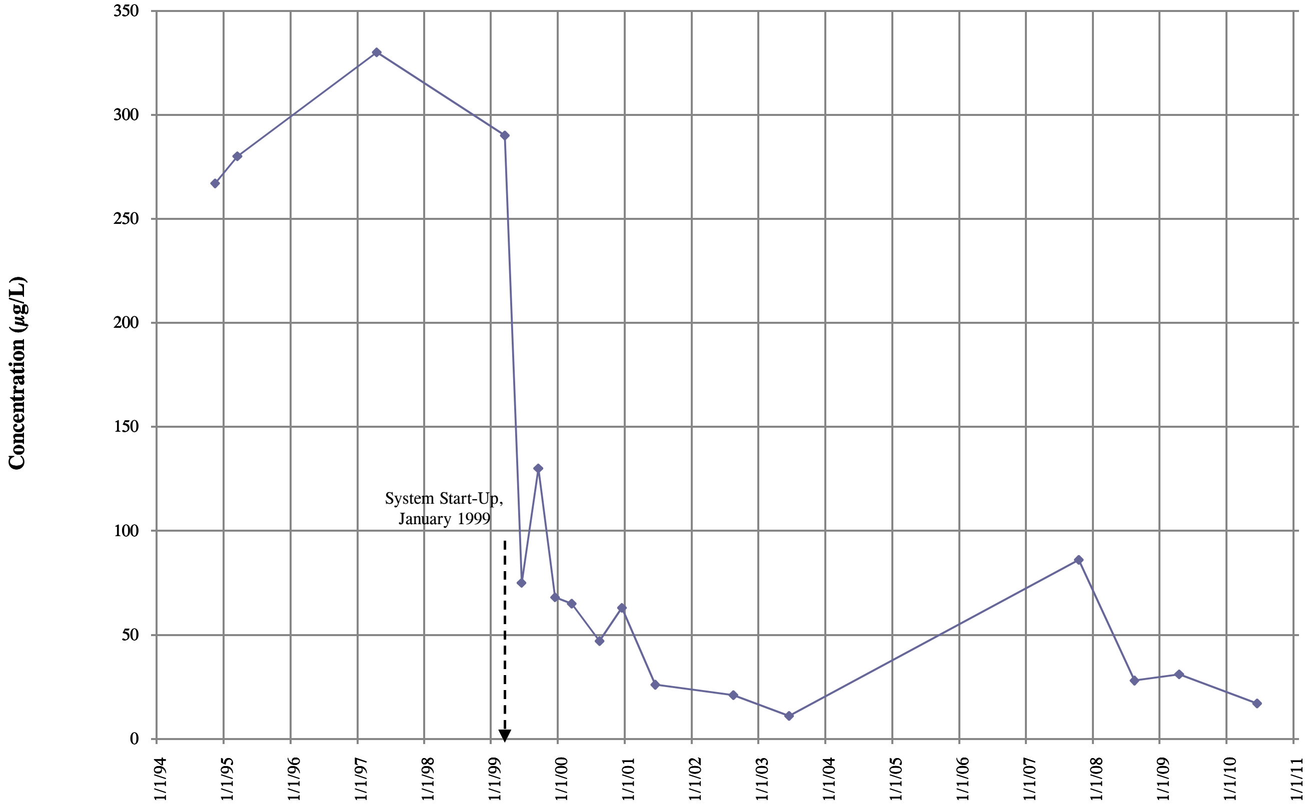
	2/14/95	4/29/97	6/25/99	1/15/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/20/10
Carbon Tetrachloride	ND	ND	ND	ND	4	3	ND	0.50 U	0.5 U	1.0 U	NS

Figure T.18 MW5D Chloroform Trend Graph



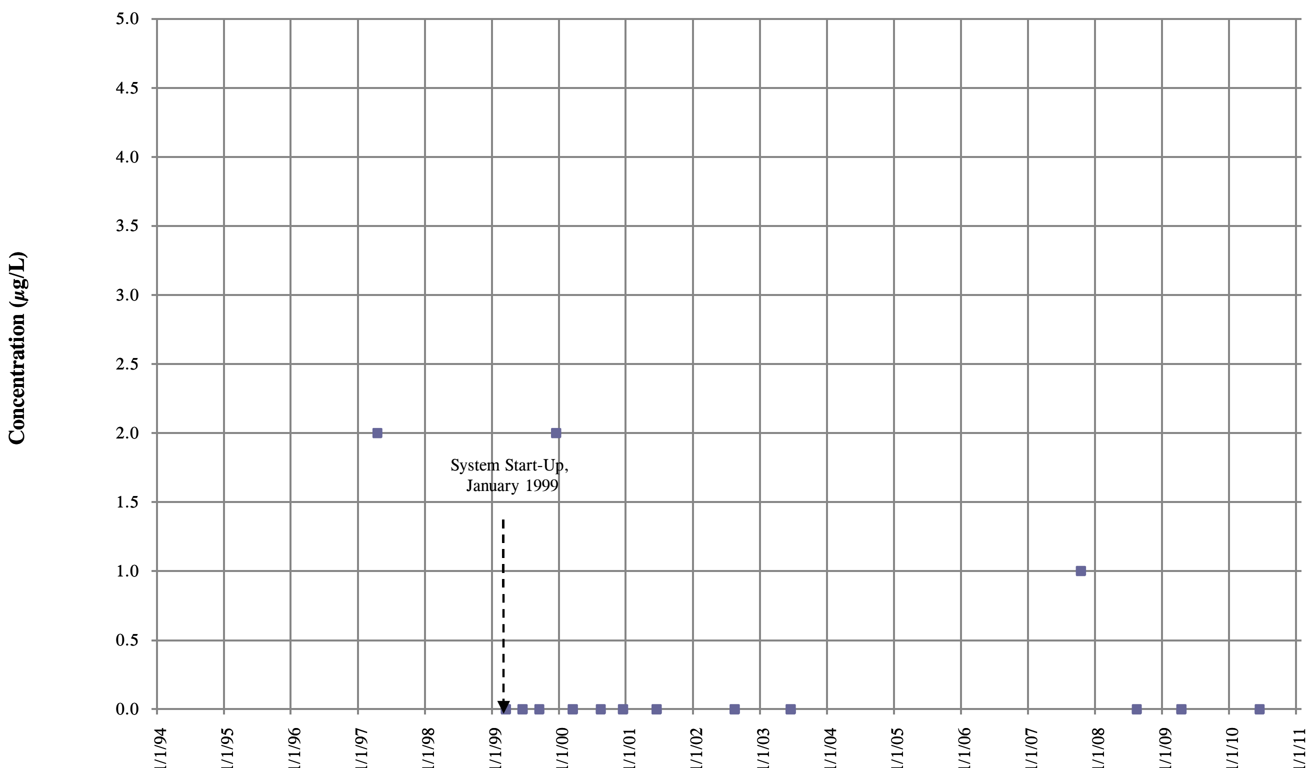
	2/14/95	4/29/97	6/25/99	1/15/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/20/10
Chloroform	ND	ND	ND	ND	ND	ND	ND	0.50 U	0.5 U	1.0 UJ	NS

Figure T.19 MW6A Carbon Tetrachloride Trend Graph



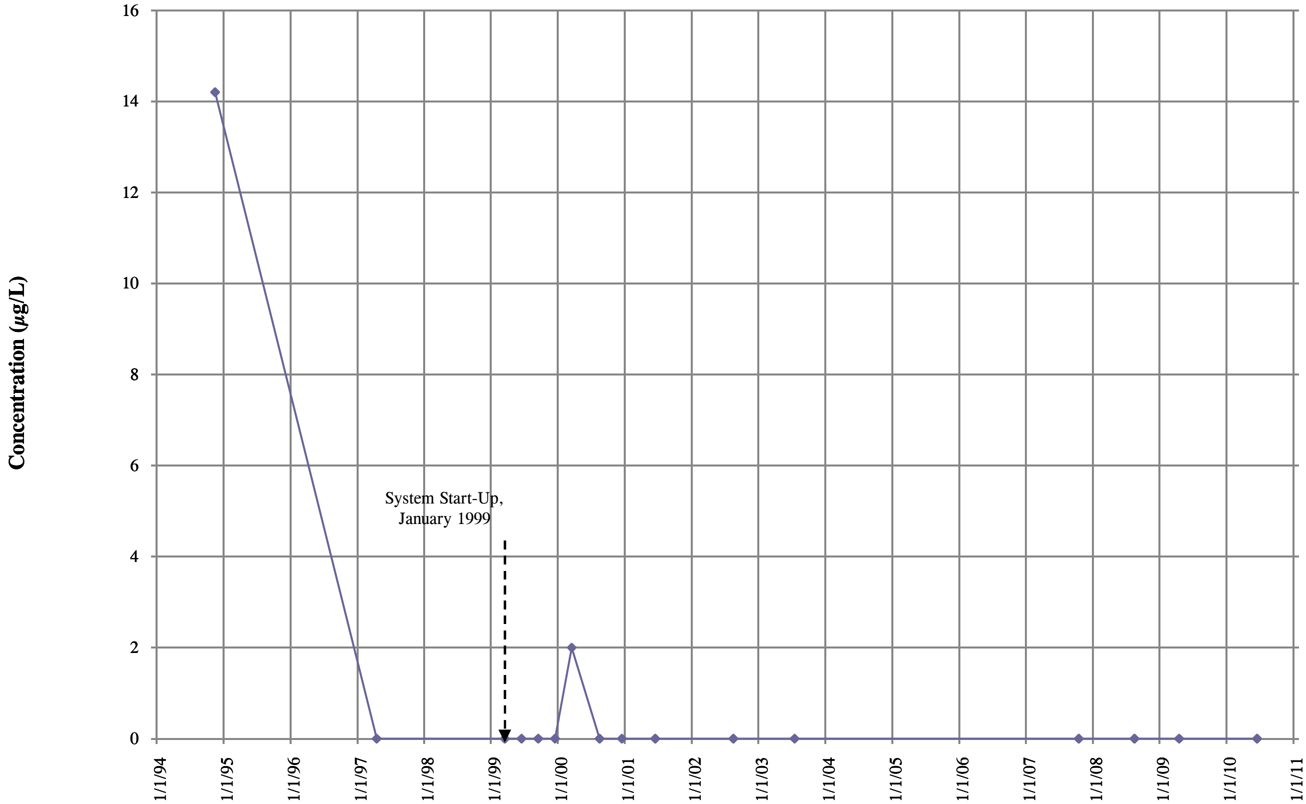
	11/30/94	3/16/95	4/29/97	3/26/99	6/22/99	9/29/99	12/14/99	3/25/00	8/11/00	12/19/00	6/4/01	8/12/02	6/24/03	10/12/07	8/14/08	4/21/09	6/20/10
Carbon Terachloride	267	280	330	290	75	130	68	65	47	63	26	21	11	86	28	31	17

Figure T.20 MW6A Chloroform Trend Graph



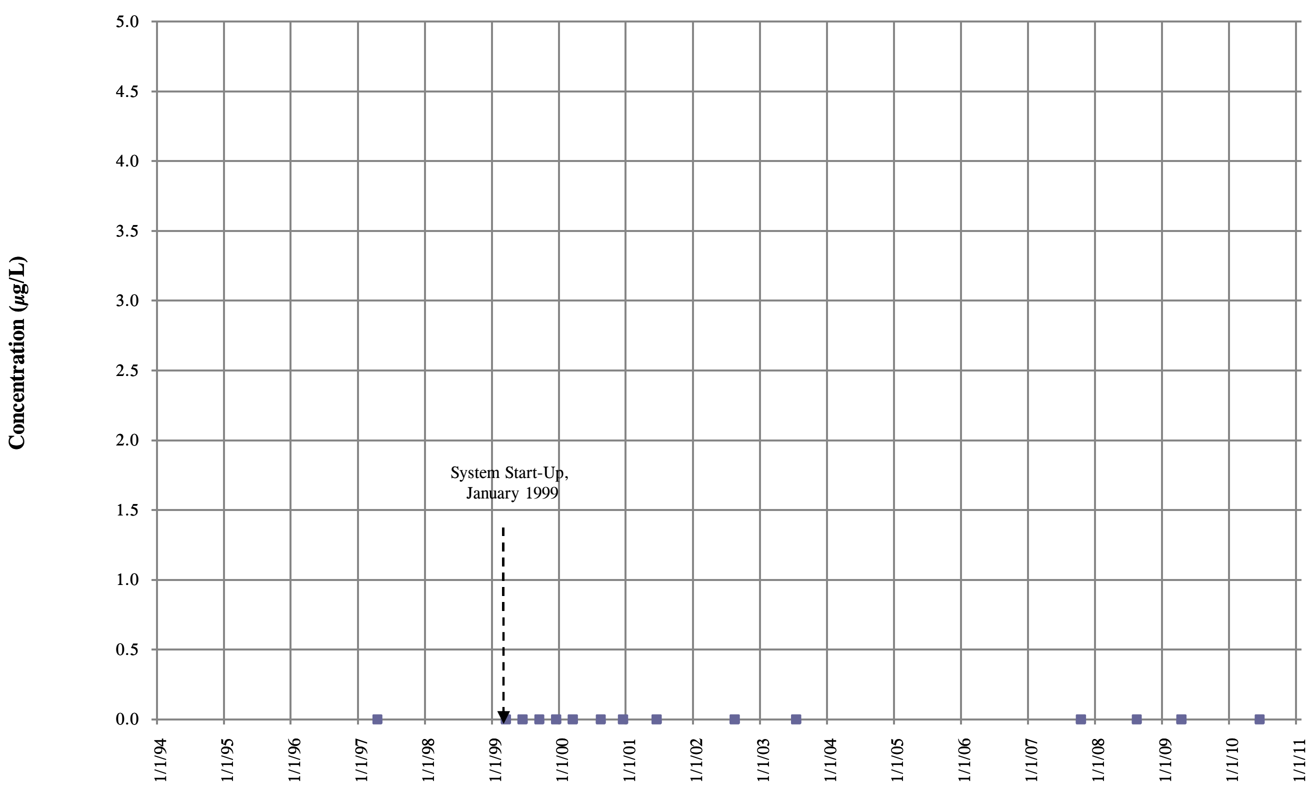
	11/30/94	3/16/95	4/29/97	3/26/99	6/22/99	9/29/99	12/14/99	3/25/00	8/11/00	12/19/00	6/4/01	8/12/02	6/24/03	10/12/07	8/14/08	4/21/09	6/20/10
Chloroform	NA	NA	2	0	0	0	2	0	0	0	0	0	0 U	1	0.5	5 U	0.50 U

Figure T.21 MW6D Carbon Tetrachloride Trend Graph



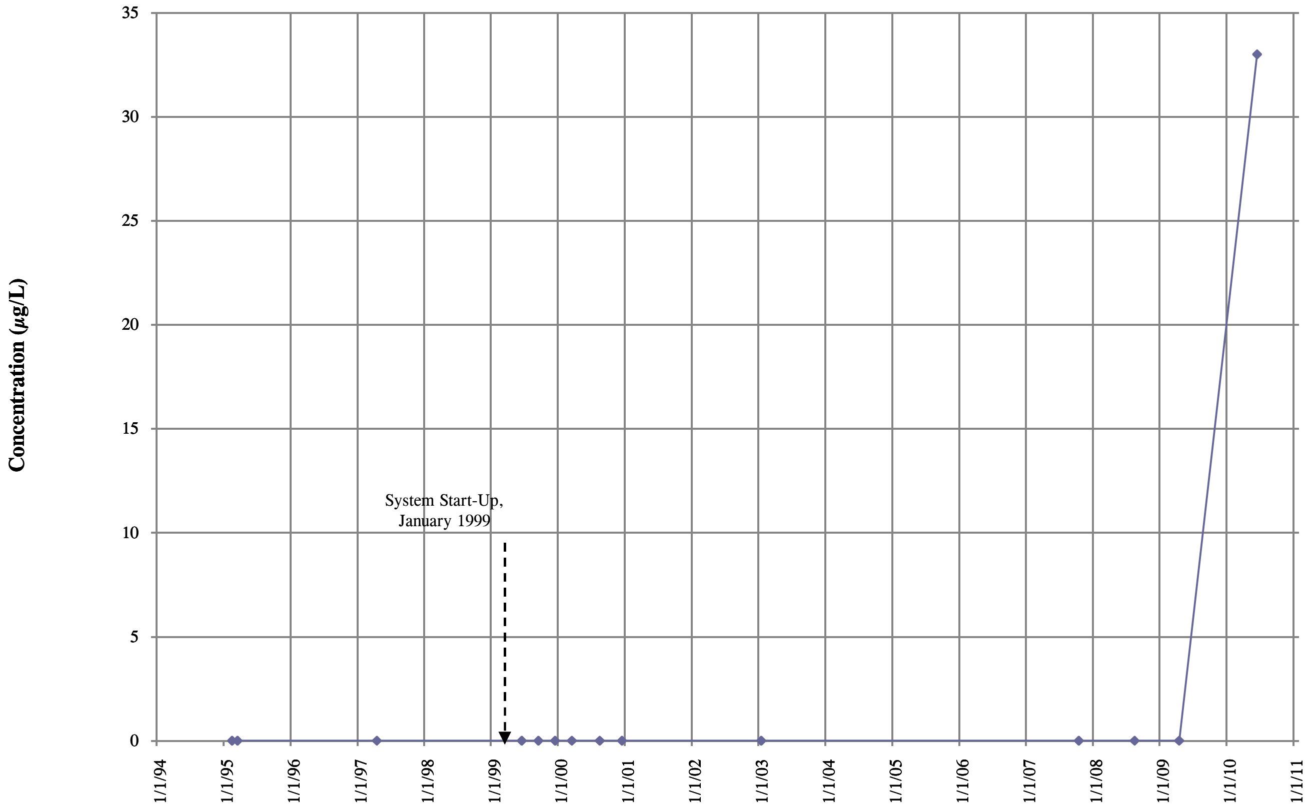
	11/30/94	4/29/97	3/25/99	6/22/99	9/29/99	12/14/99	3/25/00	8/11/00	12/19/00	6/4/01	8/12/02	7/16/03	10/12/07	8/14/08	4/21/09	6/20/10
Carbon Terachloride	14.2	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	0.50 U	0.5 U	1.0 U	0.50 U

Figure T.22 MW6D Chloroform Trend Graph



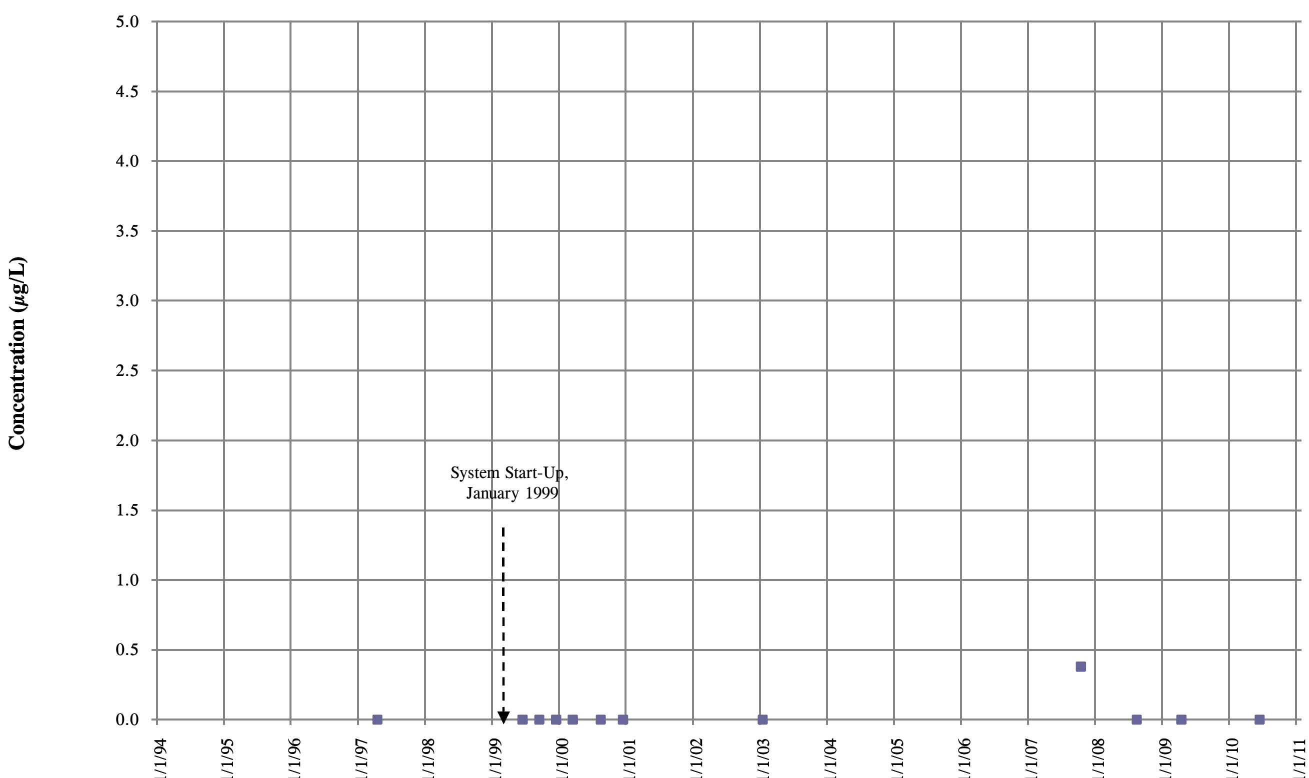
	11/30/94	4/29/97	3/25/99	6/22/99	9/29/99	12/14/99	3/25/00	8/11/00	12/19/00	6/4/01	8/12/02	7/16/03	10/12/07	8/14/08	4/21/09	6/20/10
Chloroform	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50 U	0.5 U	1.0 U	0.50 U

Figure T.23 MW6E Carbon Tetrachloride Trend Graph



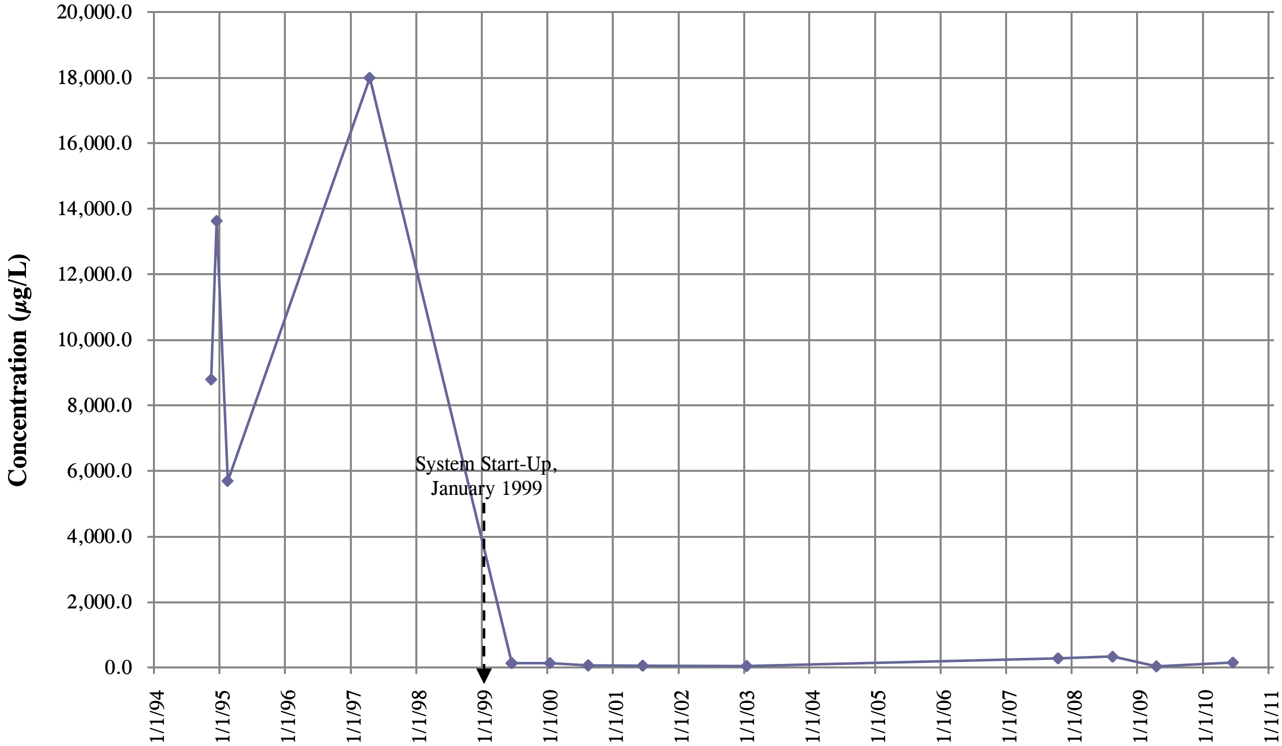
	2/14/95	3/16/95	4/29/97	6/22/99	9/28/99	12/14/99	3/25/00	8/11/00	12/19/00	1/21/03	10/10/07	8/14/08	4/21/09	6/20/10
Carbon Terachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50 U	0.5 U	1.0 U	33

Figure T.24 MW6E Chloroform Trend Graph



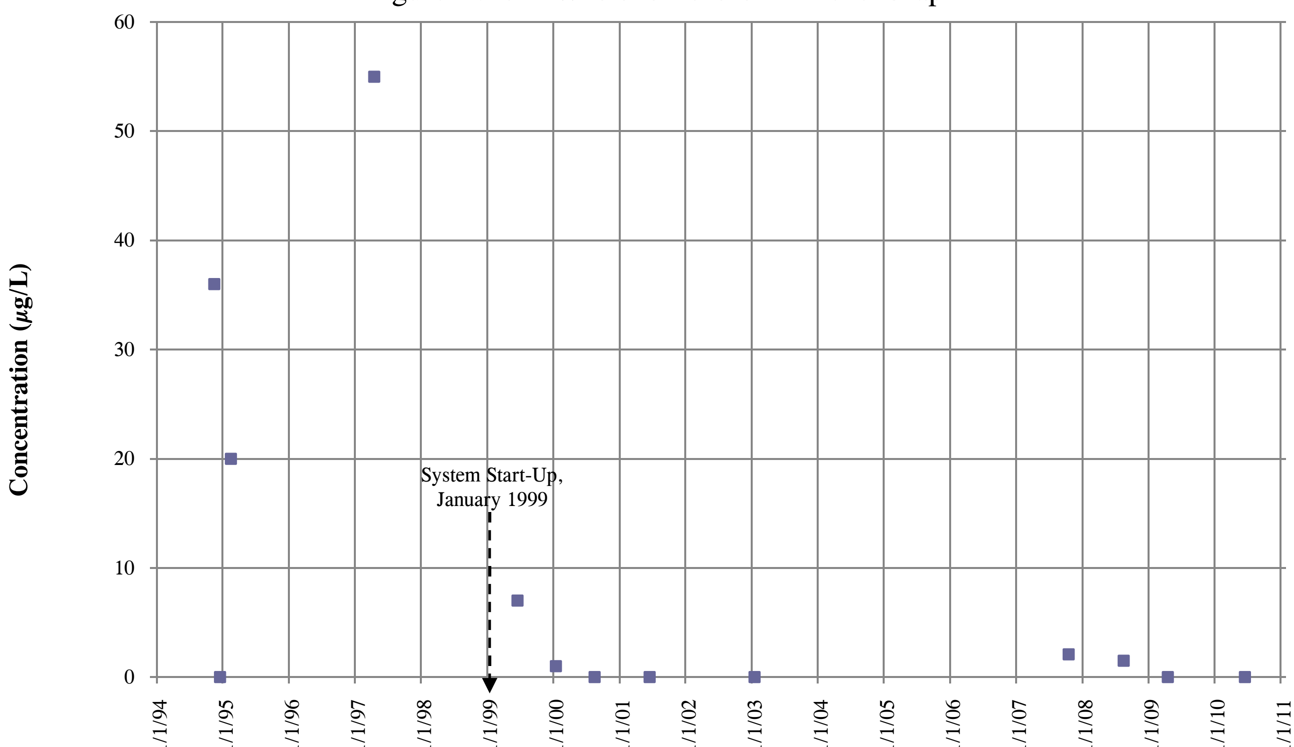
	2/14/95	3/16/95	4/29/97	6/22/99	9/28/99	12/14/99	3/25/00	8/11/00	12/19/00	1/21/03	10/10/07	8/14/08	4/21/09	6/20/10
Chloroform	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	0.38	0.5 U	1.0 U	0.50 U

Figure T.25 MW13C Carbon Tetrachloride Trend Graph



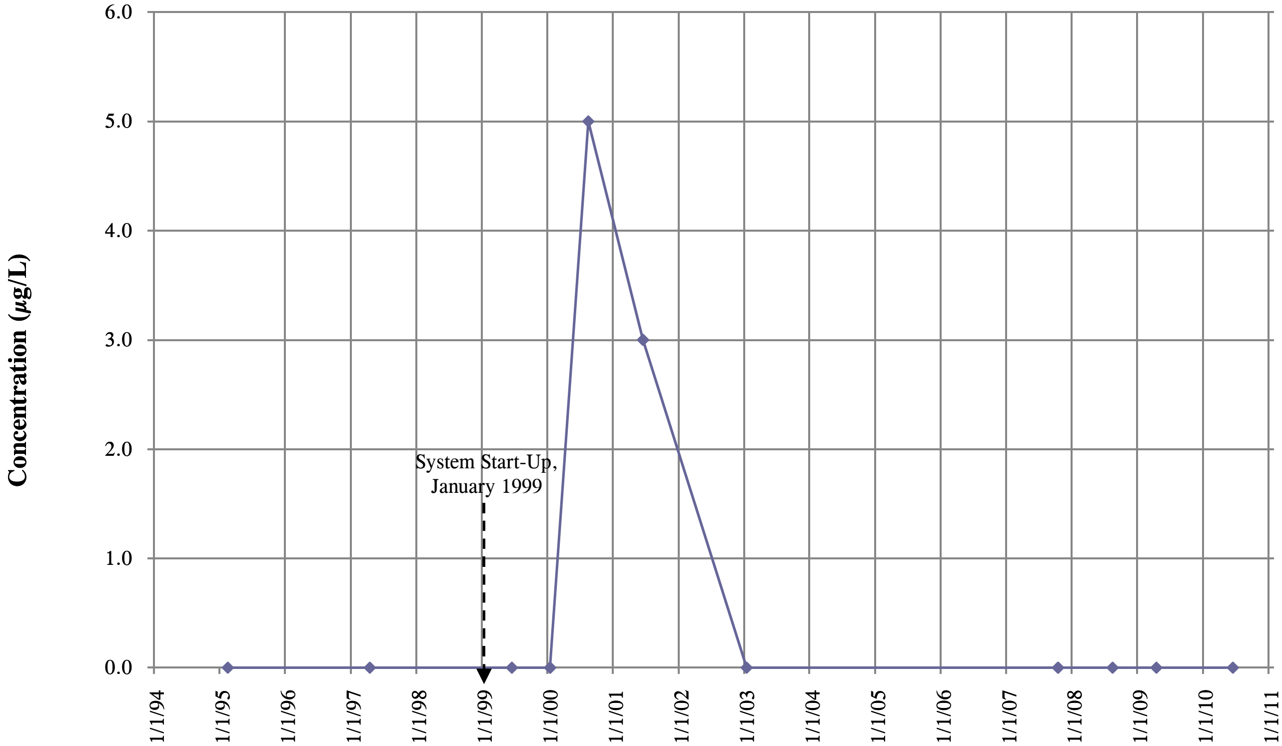
	11/19/94	12/2/94	2/15/95	4/29/97	6/24/99	1/22/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/18/10
Carbon Tetrachloride	8,800	13,631	5,700	18,000	140	140	73	62	52	290	340	44	160

Figure T.26 MW13C Chloroform Trend Graph



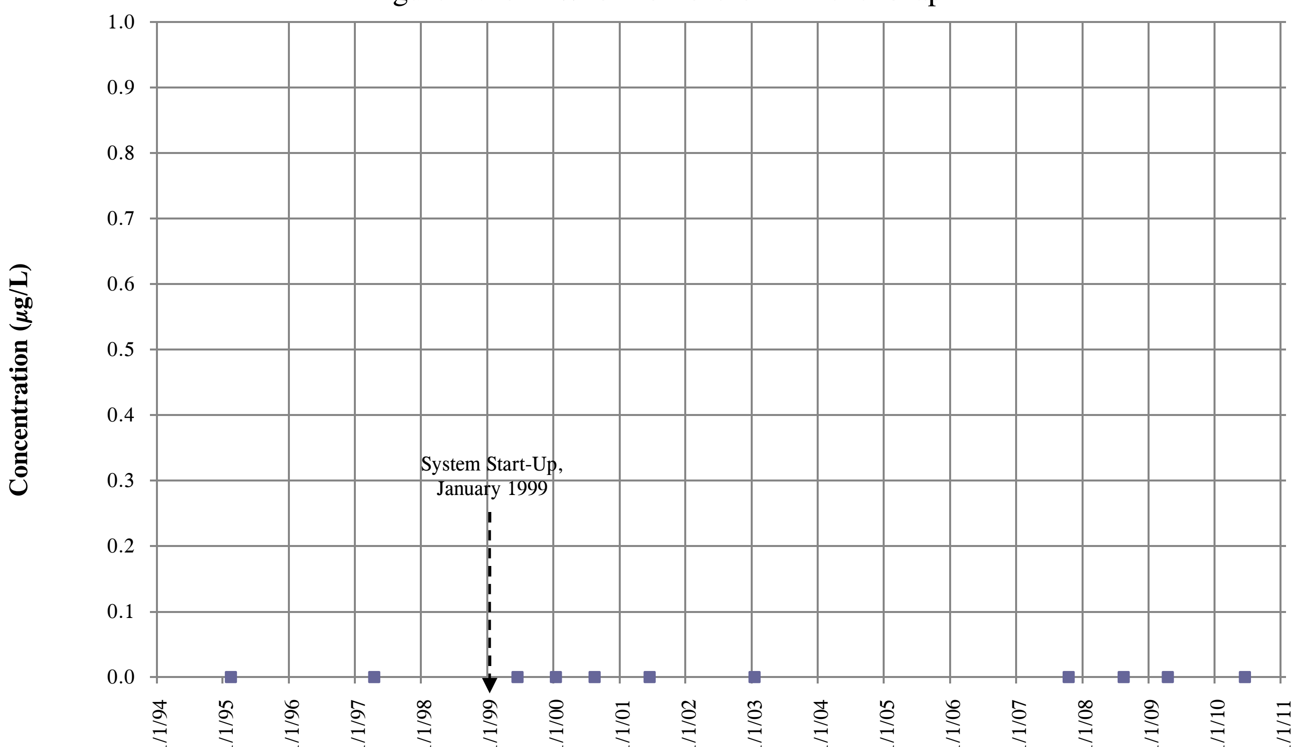
	11/19/94	12/2/94	2/15/95	4/29/97	6/24/99	1/22/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/18/10
Chloroform	36	NA	20	55	7	1	ND	ND	ND	2.1	1.5	5.0 U	0.50 U

Figure T.27 MW13E Carbon Tetrachloride Trend Graph



	2/14/95	4/29/97	6/23/99	1/22/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/18/10
Carbon Tetrachloride	ND	ND	ND	ND	5	3	ND	0.50 U	0.5 U	1.0 U	0.50 U

Figure T.28 MW13E Chloroform Trend Graph



	2/14/95	4/29/97	6/23/99	1/22/00	8/13/00	6/6/01	1/22/03	10/13/07	8/15/08	4/23/09	6/18/10
Chloroform	ND	ND	ND	ND	ND	ND	ND	0.50 U	0.5 U	1.0 UJ	0.50 U

APPENDIX U

HUMAN HEALTH RISK ASSESSMENT

FINAL
HUMAN HEALTH RISK ASSESSMENT
GARVEY ELEVATOR SUPERFUND SITE
HASTINGS, NEBRASKA

Prepared for:

U.S. Environmental Protection Agency Region 7
901 North 5th Street
Kansas City, KS 66101

Architect and Engineering Services Contract EP-S7-05-05
Task Order: 0033 and 0034

April 2011

HGL
HydroGeoLogic, Inc

FINAL
HUMAN HEALTH RISK ASSESSMENT
GARVEY ELEVATOR SUPERFUND SITE
HASTINGS, NEBRASKA

Prepared for:

U.S. Environmental Protection Agency Region 7
901 North 5th Street
Kansas City, KS 66101

Prepared by:

HydroGeoLogic, Inc
6340 Glenwood, Suite 200
Building #7
Overland Park, KS 66202

April 2011

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (continued)

Section **Page**

LIST OF ATTACHMENTS

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF TABLES (continued)

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

AES	Architect and Engineering Services
AGP	AGP Grain Marketing, LLC.
AST	above ground storage tank
bgs	below ground surface
BNSF	Burlington Northern and Santa Fe
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	chemical of potential concern
CSF	cancer slope factor
CSM	conceptual site model
DPT	direct-push technology
EDB	ethylene dibromide
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ESA	Environmental Site Assessment
FS	feasibility study
FSP	Field Sampling Plan
ft	foot/feet
Garvey	Garvey Elevator Superfund Site
GET	groundwater extraction and treatment
gpm	gallons per minute
HGL	HydroGeoLogic, Inc.
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
ILCR	incremental lifetime cancer risk
IRIS	Integrated Risk Information System
IUR	inhalation unit risk
LOAEL	lowest observed adverse effect level
MCL	maximum contaminant level
$\mu g/m^3$	micrograms per cubic meter

μg/L	micrograms per liter
mg/kg	milligrams per kilogram
mg/kg/d	milligrams per kilogram per day
mg/m^3	milligram per cubic meter
NCI	National Cancer Institute
ND	nondetect
NDEQ	Nebraska Department of Environmental Quality
NOAEL	no observed adverse effect level
OSWER	Office of Solid Waste and Emergency Response
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PPRTV	Provisional Peer Reviewed Toxicity Values
PRP	potentially responsible party
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RA	remedial action
RAGS	Risk Assessment Guidance for Superfund
RfC	reference concentration
RfD	reference dose
RI	remedial investigation
RL	reporting limit
RME	reasonable maximum exposure
RSL	regional screening level
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TCE	trichloroethene
UCL	upper confidence limit
UF	uncertainty factor
VOC	volatile organic compound

FINAL
HUMAN HEALTH RISK ASSESSMENT
GARVEY ELEVATOR SUPERFUND SITE
HASTINGS, NEBRASKA

1.0 INTRODUCTION

This Human Health Risk Assessment (HHRA) Report was prepared to support the Remedial Investigation/Feasibility Study (RI/FS) activities at the Garvey Elevator Superfund Site (site) located in Hastings, Nebraska (Figures 1.1 and 1.2). These activities are being conducted by HydroGeoLogic, Inc. (HGL) under Region 7 U.S. Environmental Protection Agency (EPA) Architect and Engineering Services (AES) contract EP-S7-05-05, Task Order 0033 and 0034. This HHRA was performed in accordance with the October 7, 2010 Human Health and Ecological Risk Assessment Approach Technical Memorandum (Technical Memorandum).

1.1 OVERVIEW

A risk assessment is an evaluation of risk to human and ecological receptors posed by the presence of chemicals at a site if no remedial action is performed. The HHRA is provided in this stand-alone document to support the RI/FS. The ecological risk assessment is provided in Appendix V of the RI. Conceptual model has been developed to identify potential release and transport mechanisms, potential receptors, and exposure pathways associated with activities at the subject site (Figure 1.3). The objective of this risk assessment is to characterize the potential risks associated with exposure to site media. Tables were prepared in support of the HHRA. These supporting tables are provided at the end of each section.

1.2 HUMAN HEALTH RISK ASSESSMENT

To provide additional information for determining the future course of action at this site, a quantitative HHRA for the most conservative receptors was performed. The methods to conduct the HHRA are consistent with the EPA risk assessment guidance as documented in *Risk Assessment Guidance for Superfund (RAGS), Volume 1, Human Health Evaluation Manual (Part A)* (EPA, 1989). Other pertinent guidance documents were used as appropriate.

1.3 SITE BACKGROUND

1.3.1 Site Description

Garvey Elevators was constructed in 1959, before this time the area was used for row crop production. The grain storage facility predominantly is surrounded by agricultural land, including portions of the property. (Figures 1.1 and 1.2). Along Highway 6 to the north of the grain storage facility lies Vontz Paving, Inc. (Vontz), an asphalt paving contractor. To the east along Highway 6 from Vontz is a lone residence. Another row of residence lies to the northwest of the grain storage facility at the intersection of Marion Road and Highway 6.

Garvey is located southwest outside the limits of the city of Hastings in Adams County, Nebraska (Figure 1.1). The township and range coordinates are NW¼ of Section 23, T7N, R10W. The street address is 2315 West Highway 6, Hastings, NE 68901. Figure 1.2 shows an aerial overview of the elevator property and nearby buildings. The grain storage facility property is bounded on the north by U.S. Highway 6/34, on the east by the Burlington Northern and Santa Fe (BNSF) railroad track, on the west by Marion Road, and on the south by farmland owned by the Walter Family Trust.

Hastings is situated within the Little Blue Natural Resources District Groundwater Management Area. Under the provisions of the Rules and Regulations for Enforcement of this district, the northern portion of the grain storage facility is within a Wellhead Protection Area (Layne GeoSciences, 1997). The elevator facility buildings and property southward are not included in the Wellhead Protection area. A permit is required to install a well with a capacity greater than or equal to 50 gallons per minute (gpm) within the protection area; however, no permit is required for wells pumping less than 50 gpm. All identified private wells within the affected area have been placed on an alternative water supply. Identification of private wells in the investigation area was conducted by the Potentially Responsible Party (PRP), and more recently EPA. Figure 1.4 shows the location of all identified private drinking water wells within the area of the site.

The Garvey Elevator Superfund Site includes the Garvey Elevators property and downgradient areas underlain by the contaminated groundwater plume that originates from the grain storage facility. EPA has designated OU1 as the area of soil and groundwater contamination on and immediately off the Garvey Elevators property. OU2 is defined as contaminated groundwater farther downgradient from the grain storage facility that extends to approximately 4.3 miles to the east.

1.3.2 Site History

The grain storage facility is an active 8-million bushel capacity grain elevator currently owned and operated by AGP Grain Marketing, LLC (AGP). The property, as described above, encompasses approximately 106 acres, 22 of which have historically been used for facility operations. The facilities at the Garvey Elevators terminal consist of a concrete elevator head house and elevator, flat storage building, steel storage bins, and associated buildings for facility maintenance, offices and breakroom, and chemical storage. The majority of the remaining 84 acres of property are used for crop production. The area surrounding the grain storage facility is rural with a sparse distribution of residential properties to the north, east and west. The closest residence is immediately adjacent to northeast property boundary approximately 1,200 feet north of the grain storage elevator.

Garvey Elevators began operation as a grain storage facility in 1959. Garvey Elevators, Inc. stated in their responses to the Request for Information Pursuant to Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that

Garvey utilized a liquid mixture of carbon tetrachloride, and carbon disulfide as a grain fumigant from 1959-1985 (USEPA, 2003). This fumigant mixture is known as 80-20 fumigant. Some formulations of the 80-20 fumigant may also have contained a minor amount of ethylene dibromide (EDB).

In 1960, Garvey Elevators, Inc., installed an approximately 3,000-gallon aboveground storage tank (AST) to the north of the silos to store the liquid fumigant. The fumigant was piped from the AST up to the grain gallery via an underground pipe that exited the subsurface and extended up the north side of the silos to the gallery. Fumigant was applied from the top of the elevator gallery (HGL, 2008a). According to one background document in the project file, a buried portion of this delivery pipe was found to be leaking and was replaced sometime before 1986 when the tank was removed (ENSR, 2005). However, during the 2008 interviews conducted by EPA and HGL, none of the five former employees of Garvey Elevators interviewed could recall replacement of broken piping. However, four of the five interviewees stated that the fittings had leaks, or that staining was observed around the tank (HGL, 2008a). The grain storage facility ceased use of the liquid fumigant in 1985. Section 1.5.4 of the RI includes a detailed discussion of potential sources, particularly the liquid fumigant AST and piping used to convey the fumigant to the stored grain.

Garvey Elevators was first identified as a source of carbon tetrachloride contamination in 1994 when a water sample collected during a Phase I Environmental Site Assessment (ESA) revealed the presence of carbon tetrachloride at 199 micrograms per liter (μg/L) in a water supply well located on the grain storage facility (Terracon, 1994). This concentration exceeded the EPA Maximum Contaminant Level (MCL) of 5 μg/L. The ESA was conducted at the behest of AGP as part of their due diligence procedures prior to purchasing the Garvey Elevators property. Garvey Elevators subsequently conducted several environmental investigations in the vicinity of the grain storage facility to determine the occurrence of carbon tetrachloride in soils and groundwater near the elevator, evaluate remedial alternatives, and estimate the costs of the Remedial Action (RA).

From 1994 through 2007, Garvey installed 47 groundwater monitoring wells, and completed numerous soil and soil gas sample borings. Previous investigations at the site are discussed further in Section 1.5 of the RI. In 1999, Garvey installed a soil vapor extraction (SVE) system and groundwater extraction and treatment (GET) system in response to the soil and groundwater contamination. Garvey also began sampling residential and business wells, and providing alternative water supplies for wells impacted by the carbon tetrachloride released from the grain storage facility into groundwater.

1.4 SCOPE OF RISK ASSESSMENT

The purpose of this report is to document the methodology and results of the HHRA for the Garvey Elevator Superfund Site. The HHRA is an analysis of the potential adverse health effects (current and future) associated with the presence of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides. and polychlorinated biphenyls (PCBs) to current and future industrial workers (indoor and outdoor); future construction workers; current and future trespassers; current and future adult farmer; and current and future residents. Specific objectives of the HHRA are:

- Evaluate available data for usability in the risk assessment and identify data gaps;
- Identify chemicals of potential concern (COPCs) to human health;
- Evaluate potential health risks associated with exposure to COPCs for multiple scenarios based on current and future land uses; and,
- Identify uncertainties associated with risk characterization.

The results of this HHRA are intended to evaluate the level of health risk and assess the potential need for remedial actions at the site.

1.5 REPORT ORGANIZATION

This HHRA report is organized as follows:

Section 1.0 – Introduction: Presents the purpose, scope, and objectives of the HHRA. A description of the site background and current site use also are provided.

Section 2.0 – Identification of Chemicals of Potential Concern: Identifies and summarizes the occurrence of constituents in all media and identifies COPCs for the HHRA.

Section 3.0 – Exposure Assessment: Presents the site conceptual model used to identify exposure routes and discusses potential human exposure pathways and potential human receptors at the site.

Section 4.0 – Toxicity Assessment: Identifies and presents summaries of the pertinent toxicological properties of the COPCs.

Section 5.0 – Risk Characterization and Uncertainty Analysis: Presents the potential risk to human health from potential exposure to constituents detected in environmental media at the site and discusses the inherent uncertainties in the risk assessment process.

Section 6.0 – Human Health Risk Assessment Summary: Summarizes the results of the risk assessment.

Section 7.0 – References: Lists the references cited in the preparation of the HHRA report.

FIGURES

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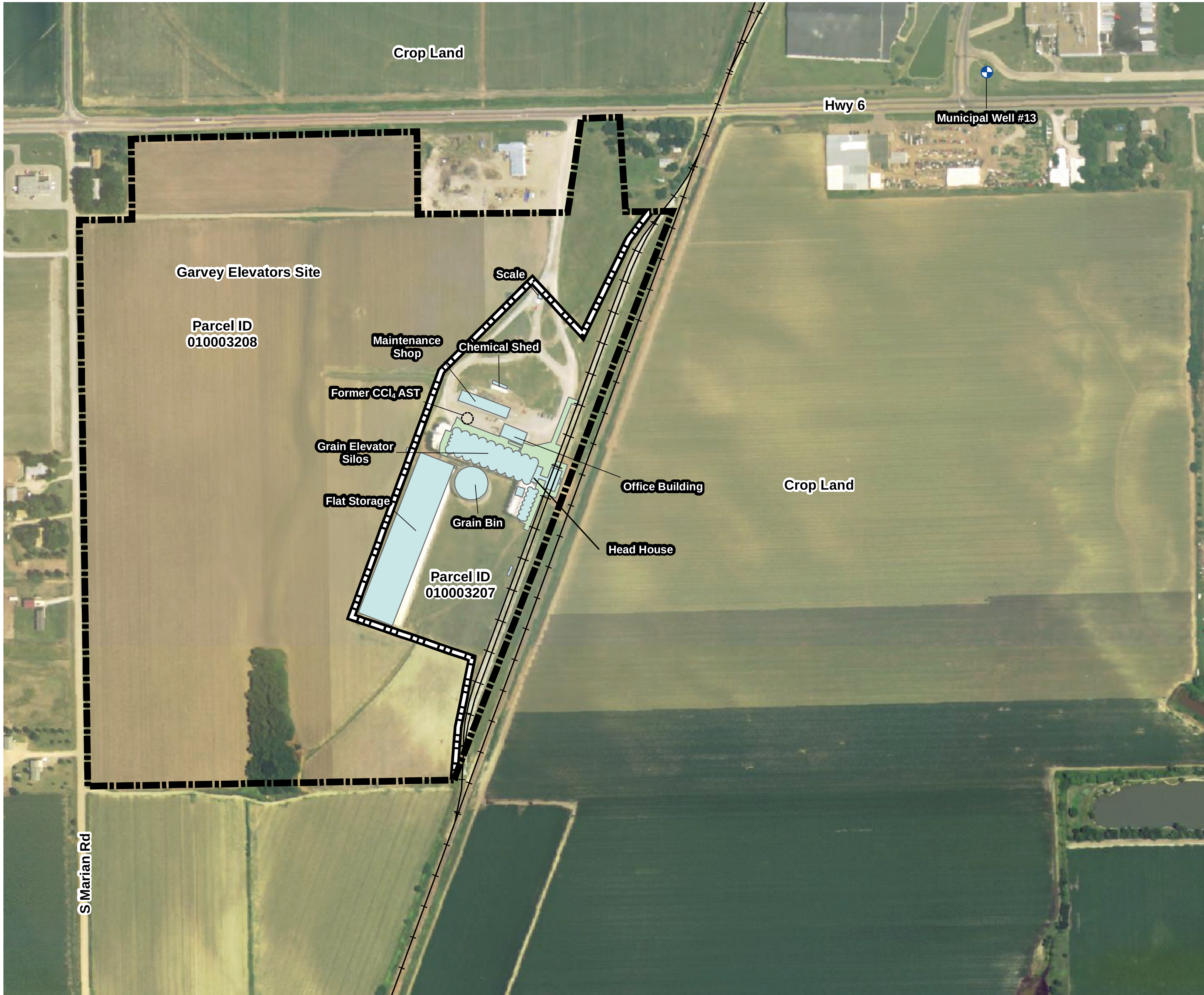
FIGURE(S)

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA/
Site_Loc_Map.mxd
Project: EP9033.01.46.11
Revised: 04/06/11 ST
Source: ESRI StreetMap USA
Nebraska DNR

HGL HydroGeoLogic, Inc

Figure 1.1
Site Location Map
Garvey Elevators Site
Hastings, NE



HGL—Human Health Risk Assessment,
Garvey Elevator Superfund Site—Hastings, NE

Figure 1.2
Current Site Map

Legend

Garvey Property Boundary
OU1 Boundary
Concrete Paved Area
Buildings
Gravel Road
Railroad

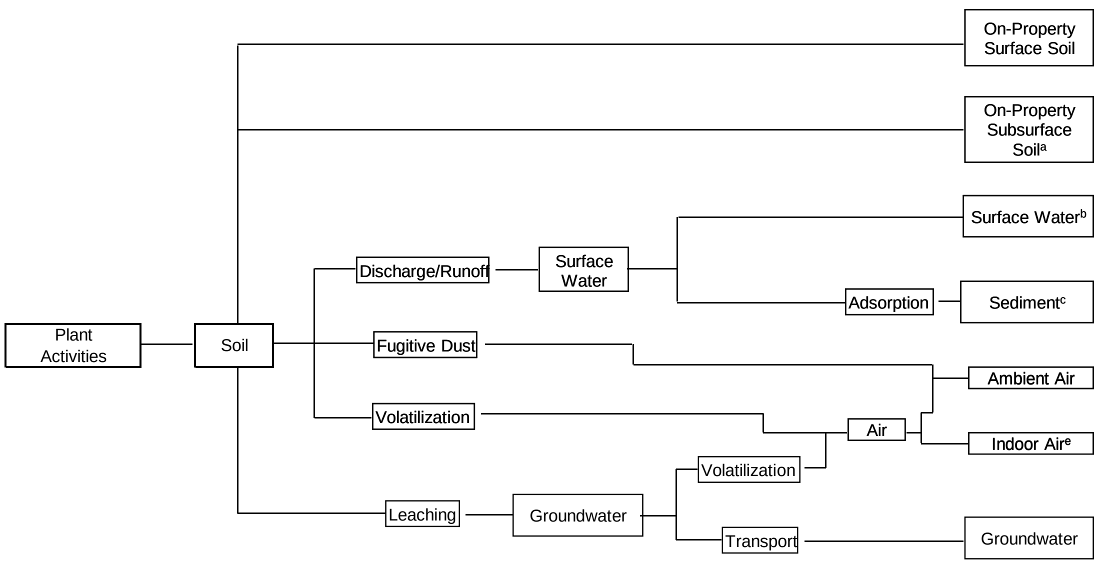
0 200 400 800
Feet

N

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA/SiteMap.mxd
Project: EP9033.01.46.11
Revised: 04/05/11 RL
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

Figure 1.3
Conceptual Site Model - Human Health Risk Assessment
Garvey Elevator Superfund Site
Hastings, NE

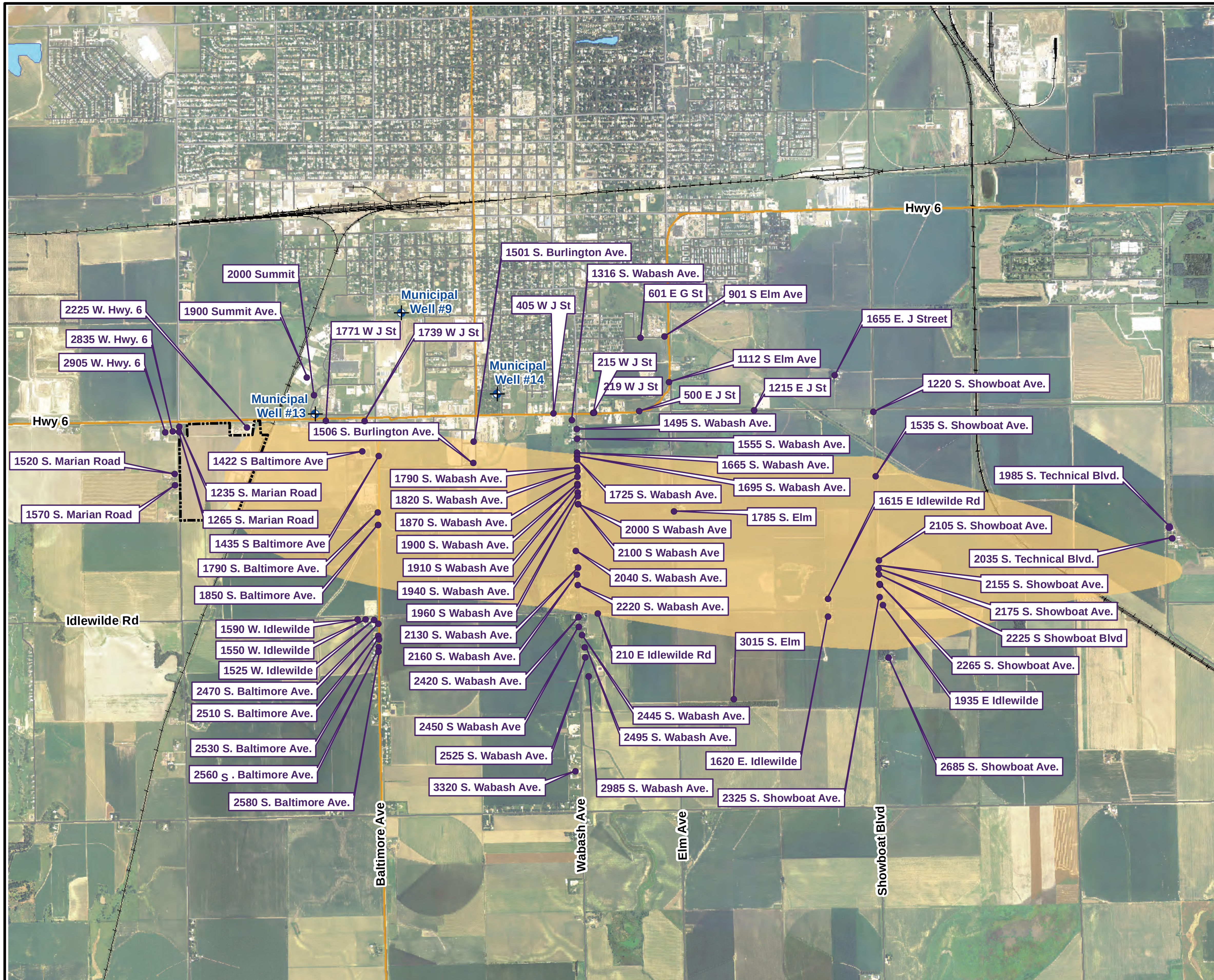


Exposure Medium	Exposure Route	Current: Off-Property Resident	Current: Indoor Industrial Worker	Current: Outdoor Industrial Worker	Current: Trespasser	Future: On-Property Resident	Future: Indoor Industrial Worker	Future: Outdoor Industrial Worker	Future: Construction Worker	Future: Trespasser
On-Property Surface Soil	Ingestion			X	X	X		X	X	X
	Dermal			X	X	X		X	X	X
	Inhalation			X	X	X		X	X	X
On-Property Subsurface Soil[a]	Ingestion					X	X	X	X	X
	Dermal					X	X	X	X	X
	Inhalation					X	X	X	X	X
Surface Water[b]	Ingestion									
	Dermal									
Sediment[c]	Ingestion									
	Dermal									
Ambient Air	Inhalation		X[d]	X	X	X	X[d]	X	X	X
Indoor Air[e]	Inhalation	X	X			X	X			
Groundwater	Ingestion	X				X				
	Dermal	X				X				

[a] In future scenario subsurface soils are brought to surface.
[b] Ephemeral only.
[b,c] Included as surface soil
[d] Minor exposure pathway
[e] Groundwater is ~ 140 ft bgs and not likely source to indoor air. Fugitive dust minor source to indoor air.

HGL HydroGeoLogic, Inc

Figure 1.4
Private Well Locations



Legend

- Private Well
- Municipal Well
- Garvey Property Boundary
- Carbon Tetrachloride in Groundwater Detected Above 5 µg/L*
- Railroad

Notes:

* Based on samples collected January 2008 through June 2010.

Ave. - Avenue
Blvd. - Boulevard
E - East
S - South
St. - Street
W - West

0 0.5 1
Miles

N

Filename: X:\EPA009\Hwy6_281\GIS\MXDs (1-03)Private_Well_Locations.mxd
Project: EP9012.01.55.01
Revised: 04/04/11 RL
Source: Hasting Utility Department, Nebraska DNR, HGL Database 2008

HGL HydroGeoLogic, Inc

2.0 IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN

This section summarizes the data that were collected at the site and used in the risk assessment. The occurrence data for all media are presented and the resulting COPCs are identified.

2.1 SUMMARY OF INVESTIGATION FINDINGS

The presence of carbon tetrachloride in groundwater at the grain storage facility was first identified during the 1994 Phase I ESA. Several environmental investigations were subsequently conducted by the Garvey Elevators and by contractors to Nebraska Department of Environmental Quality (NDEQ) and EPA. Site characterization and response activities began in 1994 and progressed in phases to evaluate the potential sources, and the nature and extent of the VOC impacts to soil and groundwater. A chronological listing of previous contamination investigations conducted at the Garvey Elevator Superfund Site is provided in Table 1.2 of the RI document. Historical data was used to plan the RI activities. The RI sampling regime was designed to address data gaps remaining from past investigations and augment the existing data set with additional data to more accurately and completely characterize site conditions, and obtain information/data required for the FS. Data collected during the RI and data from previous investigations in which samples were collected and validated under an EPA-approved Quality Assurance Project Plan (QAPP) were considered to be more reliable and defensible due to more stringent quality assurance/quality control (QA/QC) standards applied to the data. Therefore, this was the primary data set used for the site characterization. The HHRA utilized selected historical data to complete an overall evaluation of the site risks for all affected media. All data sources used in the HHRA are referenced.

The RI field investigation included an extensive soil and groundwater direct push technology (DPT) investigation and sampling the monitoring well network of both existing and newly installed monitoring wells to supplement data from previous investigations. The data collected during the RI field investigation was adequate to determine the nature and extent of contamination attributable to the site and to support the risk assessments.

2.2 DATA USED IN THE BASELINE RISK ASSESSMENT

Numerous environmental investigations have been conducted by the former property owner, the NDEQ, and the EPA since Garvey Elevators was first identified as a source of carbon tetrachloride contamination in 1994. These investigations indicate that groundwater and soil on the former Garvey Elevators property, and groundwater off the property are contaminated primarily with carbon tetrachloride and its degradation compound, chloroform. The highest levels of contamination has been found primarily near features associated with the grain storage facility operations: the AST used to hold liquid fumigant, grain elevator silos, flat storage building, steel grain bins, railroad spur and construction debris disposal pit, and fumigant applicator wash area. Lower levels of contaminants have also been detected in samples collected from private wells downgradient of the property. Site characterization activities completed in 1995 delineated a contaminant plume originating from the Garvey

Elevators property and migrating east-southeast for a distance of at least 2.9 miles (HWS,1995).

During the multiple site investigation events, including the RI completed by HGL in 2009 and 2010, surface soil, subsurface soil, soil gas, subslab gas, indoor air, sediment, and groundwater samples were collected. Only validated data obtained during these investigations were used in the preparation of the HHRA. Data that were rejected during the validation process were not included. J-qualified data (indicating an estimated value) were used and treated as non-qualified data. U-qualified data indicate a non-detected result and were treated as such. The data used in the HHRA were obtained from datasets of previous studies and the RI as listed below.

- Surface soil data – Samples collected from 0 to 6 inches below ground surface (bgs) were used for the HHRA, as defined in Table 2.1, and illustrated on Figure 2.1. The data was obtained in accordance with the sampling scheme and procedures specified in the RI Work Plan. In general, there is little evidence that surface soils are affected by activities at the former grain storage facility on the Garvey property, as indicated by the fact that carbon tetrachloride was not detected in surface soils. Because the surface soil data do not indicate a pattern or trend to chemical distribution, all the surface soil data was used for the HHRA.
- Shallow subsurface soil data – Samples collected from 6 inches to 10 feet bgs were used for the HHRA, as defined in Table 2.2, and illustrated on Figure 2.2. This data was obtained in accordance with the sampling scheme and procedures specified in the RI Work Plan. The sample locations selected for consideration in the risk assessments are considered representative of the more contaminated subsurface soil on the Garvey property. These samples were used so that the most conservative estimates are considered when calculating risk from exposure to shallow subsurface soil.
- Sediment – Sediment samples collected during the RI will be used, as defined in Table 2.3, and illustrated on Figure 2.1. Samples were collected from intermittent drainages in accordance with the sampling scheme and procedures specified in the RI Work Plan. Sediment sample data were treated as surface soil samples. These samples are considered unbiased and representative of Site wide sediment conditions and associated potential contamination. Consistent with surface soil, there is little evidence that sediments are affected by activities at the former grain storage facility on the Garvey property: no carbon tetrachloride has been detected in surface soils, the presence of surface water is ephemeral, and groundwater is too deep to affect these shallow sediments. Similar to the surface soil, because the sediment concentrations show no spatial trends, data from all sample points were used in the risk assessment.
- Groundwater – The most current data from groundwater samples collected from on and off the Garvey property during the RI (from August 2009, December 2009, and June 2010 RI samples), as defined in Tables 2.4 and 2.5 (Figures 2.3 and 2.4) were used in the HHRA. RI samples were obtained in accordance with the sampling scheme and procedures specified in the RI Work Plan. The dataset for the risk assessments includes all detections in groundwater collected from on the property at depths screened from 119 to 142 feet bgs. This interval represents the most contaminated groundwater, and

provides the most conservative estimates for risk in the HHRA. For groundwater contamination off the Garvey property, the data from the most contaminated wells, and wells in close proximity to these, were included. These data were obtained during past investigations conducted by the property owner, NDEQ, and EPA. The most contaminated wells (with detections of site-related contaminants over 100 μg/L) are: MW105A, C, and D, MW46-D1 and –D2, TS1-01 and TS1-02; and private wells at 1665 S. Wabash, 1725 S. Wabash, 1910 S. Wabash, 1940 S. Wabash, 1960 S. Wabash, and 2000 S. Wabash. Nearby wells that were included in the dataset are private wells at 1695 S. Wabash, 1820 S. Wabash, 1870 S. Wabash, and 1900 S. Wabash.

- Air – The most current data from subslab soil gas samples collected during the RI were used (as defined in Table 2.6), because subslab air is considered more representative of site-related contamination than the indoor air data. Comparison of the indoor air data to the subslab data indicate that the primary site contaminants, carbon tetrachloride and chloroform, were present in the subslab samples but were not detected in the indoor air samples. These data may reflect operation of the SVE system during collection of the indoor air samples. Operation of the SVE system likely has resulted in an incomplete contaminant migration pathway across the slab foundation. To be consistent with CERCLA baseline risk assessment assumptions, future use exposure scenarios were evaluated using subslab data under the premise that the SVE system is not operating. Sample locations are shown on Figure 2.5 and 2.6. Subslab soil gas samples were obtained in accordance with the sampling scheme and procedures specified in the RI Work Plan. In an effort to use the most conservative data, only samples with detections were used when completing the HHRA.

2.3 SELECTION OF COPCS

A key step in the risk assessment process is identification of COPCs as discussed in RAGS (EPA, 1989). Analytes reported as nondetect in any of the samples for a particular medium will be excluded from the COPC list for that medium. In accordance with EPA guidance, COPCs were identified through comparison of maximum detected or estimated concentrations to risk-based screening levels. Screening levels were obtained from the EPA Regional Screening Levels (RSLs) as described below. These RSLs incorporate contributions from ingestion, dermal contact, and inhalation.

2.3.1 Surface and Subsurface Soil and Sediment

From a human exposure perspective sediment was treated as soil in the risk assessment. The intermittent nature of surface water features at the Garvey Elevator Superfund Site causes sediment to act as surface soil in the context of exposure because it is not submerged most of the time. In the following sections, soils and sediments were screened separately, though using the same soil RSLs.

Non-Excavation Receptors

For receptors not involved with excavation-type activities, such as the industrial worker (indoor and outdoor), resident, trespasser, or site visitor, soil COPCs were identified as follows:

- The maximum detected concentration of each carcinogen was compared to the EPA Residential Soil RSL; and
- The maximum detected concentration of each non-carcinogen was compared to one-tenth the EPA Residential Soil RSL.

For a given analyte, if the maximum detected concentration is greater than any of the above screening values, the chemical was identified as a COPC for direct contact with soil.

No COPCs were retained for surface soil or subsurface soil based on the screening process. The occurrence summary information are presented in Tables 2.7 and 2.8.

Benzo(a)pyrene and benzo(b)fluoranthene were retained as sediment COPCs based on the screening process. The occurrence summary information is presented in Table 2.9.

Construction Worker

For receptors involved with excavation activities, soil COPCs for ingestion and dermal contact were identified as follows:

- The maximum detected concentration of each carcinogen was compared to the USEPA Industrial Soil RSL; and
- The maximum detected concentration of each non-carcinogen was compared to one-tenth the EPA Industrial Soil RSL adjusted by a factor of ten.

For construction workers, the COPCs for inhalation exposure were identified in accordance with the Technical Memorandum (HGL, 2010) summarized as follows:

- The maximum calculated ambient air concentrations (fugitive dust or volatile emissions) were calculated from the maximum detected soil concentrations. The ambient air concentration was calculated in Tables 2.10 and 2.11 using a default particulate emission factor for evaluating exposure for unpaved road traffic (7.74E05 m^3/kg) provided in Appendix E of the EPA Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (2002). The details of the volatilization factor (VF) calculation can be found in Attachment 1.
- The calculated air concentration of each carcinogen was compared to the EPA Industrial Air RSL.
- The calculated air concentration of each non-carcinogen was compared to one-tenth the EPA Industrial Air RSL.

No COPCs were retained for inhalation of fugitive dust or volatile emissions from the soil during excavation activities. The occurrence summary information is presented in Table 2.11.

No COPCs were retained for the combined surface and subsurface soil based on the screening process. The occurrence summary information are presented in Table 2.12.

Benzo(a)pyrene was retained as sediment COPC based on the screening process. The occurrence summary information is presented in Table 2.13.

2.3.2 Groundwater

COPCs for groundwater were identified as follows:

- The maximum detected concentration of each carcinogen was compared to the EPA Tap Water RSL; and
- The maximum detected concentration of each non-carcinogen was compared to one-tenth the EPA Tap Water RSL.

If the maximum detected concentration of a given chemical was greater than any of the above screening values, it was retained for quantitative analysis.

For on-property groundwater, four VOCs (benzene, carbon tetrachloride, chloroform, and trichloroethene [TCE]) were retained as groundwater COPCs based on the screening process. The occurrence summary information is presented in Table 2.14.

For off-property groundwater, three VOCs (carbon tetrachloride, chloroform, and 1,2-dichloroethane) were retained as groundwater COPCs based on the screening process. The occurrence summary information is presented in Table 2.15.

2.3.3 Subslab Soil Gas

Volatile compounds present in groundwater and soil may diffuse through the soil gas and, if present, an overlying building foundation, potentially accumulating within the overlying structure. As noted in Section 2.2, the RI included collection of both indoor air and subslab soil gas samples. While the indoor air data represent potential exposure by current indoor workers, evaluation of the indoor air data to the soil gas data indicates that the indoor air data likely reflect chemicals associated with current operations as opposed to historical releases. For example, the primary site contaminants, carbon tetrachloride and chloroform, were detected in the subslab soil gas samples but not in the indoor air samples. To focus the evaluation on historical contamination, not current operations, the risk assessment was based on the soil gas data. To account for attenuation associated with migration across the building foundation, the subslab soil gas concentrations were multiplied by 0.1. To identify COPCs for the future resident, the adjusted soil gas concentrations were compared to the residential air RSLs (cancer risk = 1E-06 and non-cancer hazard quotient (HQ) = 0.1). To identify COPCs for the industrial/commercial worker, the adjusted soil gas concentrations were compared to the industrial air RSL (cancer risk = 1E-06 and non-cancer HQ = 0.1).

For future residents, three COPCs (chloroform, tetrachloroethene [PCE], and TCE) were identified for the vapor intrusion pathway (Table 2.16). Two vapor intrusion COPCs, chloroform and PCE, were identified for the industrial worker (Table 2.17).

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TABLE(S)

Sample Location	SB-09	SB-11	SB-12	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-24	SB-27	SB-29	SB-30	SB-31	SB-32
EPA Lab ID	**4518-46**	**4518-40**	**4518-35**	**4518-109**	**4518-109FD**	**4518-121**	**4518-125**	**4518-28**	**4518-31**	**4518-18**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**
Sample Collection Depth (ft bgs)	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**	**0-0.5**	**0-0.5**	**0-1.5**	**0-0.5**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**
Sample Collection Date	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**
VOCs (µg/kg)															
1,1,1-Trichloroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,1,2,2-Tetrachloroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,1,2-Trichloroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,1,2-Trichlorotrifluoroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,1-Dichloroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,1-Dichloroethene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2,3-Trichlorobenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2,4-Trichlorobenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2-Dibromo-3-Chloropropane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2-Dibromoethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2-Dichlorobenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2-Dichloroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,2-Dichloropropane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,3-Dichlorobenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
1,4-Dichlorobenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
2-Butanone	10 U	12 U	**27**	NA	NA	NA	NA	NA	NA	**14**	14 U	**15**	**14**	**20**	**NA**
2-Hexanone	10 U	12 U	14 U	NA	NA	NA	NA	NA	NA	11 U	14 U	9.5 U	12 U	13 U	NA
4-Methyl-2-Pentanone	10 U	12 U	14 U	NA	NA	NA	NA	NA	NA	11 U	14 U	9.5 U	12 U	13 U	NA
Acetone	**29**	**55**	**130**	NA	NA	NA	NA	NA	NA	**72**	**39**	**93**	**56**	**140**	**NA**
Benzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Bromochloromethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Bromodichloromethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Bromoform	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Bromomethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Carbon Disulfide	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Carbon Tetrachloride	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Chlorobenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Chloroethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Chloroform	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Chloromethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
cis-1,2-Dichloroethene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
cis-1,3-Dichloropropene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Cyclohexane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Dibromochloromethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Dichlorodifluoromethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Ethyl Benzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Isopropylbenzene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
m and/or p-Xylene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Methyl Acetate	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	**7.3**	NA

Sample Location	SB-09	SB-11	SB-12	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-24	SB-27	SB-29	SB-30	SB-31	SB-32
EPA Lab ID	4518-46	4518-40	4518-35	4518-109	4518-109FD	4518-121	4518-125	4518-28	4518-31	4518-18	4518-89	4518-98	4518-112	4518-10	4518-100
Sample Collection Depth (ft bgs)	0-1	0-1	0-1	0-1	0-1	0-0.5	0-0.5	0-1.5	0-0.5	0-1	0-1	0-1	0-1	0-1	0-1
Sample Collection Date	8/4/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/6/2009	8/5/2009	8/6/2009
Methyl tert-butyl ether	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Methylcyclohexane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Methylene Chloride	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
o-Xylene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Styrene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Tetrachloroethene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Toluene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
trans-1,2-Dichloroethene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
trans-1,3-Dichloropropene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Trichloroethene	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Trichlorofluoromethane	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
Vinyl Chloride	5.1 U	5.9 U	6.8 U	NA	NA	NA	NA	NA	NA	5.7 U	7.1 U	4.8 U	6.2 U	6.4 U	NA
SVOCs (μg/kg)															
1,2,4,5-Tetrachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	NA	NA	NA	390 U	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	NA	NA	NA	390 U	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	NA	NA	NA	390 U	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	NA	NA	NA	390 U	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	NA	NA	NA	390 U	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	NA	NA	NA	390 U	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA

Sample Location	SB-09	SB-11	SB-12	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-24	SB-27	SB-29	SB-30	SB-31	SB-32
EPA Lab ID	**4518-46**	**4518-40**	**4518-35**	**4518-109**	**4518-109FD**	**4518-121**	**4518-125**	**4518-28**	**4518-31**	**4518-18**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**
Sample Collection Depth (ft bgs)	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**	**0-0.5**	**0-0.5**	**0-1.5**	**0-0.5**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**
Sample Collection Date	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Butylbenzylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Diethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Dimethylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
N-nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
N-nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 UJ	NA	NA	NA	390 UJ	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	NA	NA	NA	200 U	NA

Sample Location	SB-09	SB-11	SB-12	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-24	SB-27	SB-29	SB-30	SB-31	SB-32
EPA Lab ID	**4518-46**	**4518-40**	**4518-35**	**4518-109**	**4518-109FD**	**4518-121**	**4518-125**	**4518-28**	**4518-31**	**4518-18**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**
Sample Collection Depth (ft bgs)	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**	**0-0.5**	**0-0.5**	**0-1.5**	**0-0.5**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**
Sample Collection Date	**8/4/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**
Pesticides (μg/kg)															
A-BHC	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
Aldrin	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
B-BHC	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
cis-Chlordane	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
D-BHC	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
Dieldrin	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
Endosulfan I	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
Endosulfan II	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
Endosulfan Sulfate	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
Endrin	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
Endrin Aldehyde	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
Endrin Ketone	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
G-BHC	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
Heptachlor	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
Heptachlor Epoxide	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	**3.1 J**	2.1 U	NA	NA	NA	2.0 U	2.0 U
p,p'-DDD	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
p,p'-DDE	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
p,p'-DDT	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	3.9 U	4.0 U
p,p'-Methoxychlor	NA	NA	NA	20 U	20 U	21 U	18 U	21 U	21 U	21 U	NA	NA	NA	20 U	20 U
Toxaphene	NA	NA	NA	200 U	200 U	210 U	180 U	210 U	210 U	210 U	NA	NA	NA	200 U	200 U
trans-Chlordane	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	NA	NA	NA	2.0 U	2.0 U
UAA Pesticides (μg/kg)															
Malathion	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.6 U	NA	NA	NA	78.6 U	80.2 U
Herbicides (μg/kg)															
2,4,5-T	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7 U	NA	NA	NA	11.4 U	11.7 U
2,4,5-TP	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.5 U	NA	NA	NA	9.3 U	9.5 U
2,4-D	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.6 U	NA	NA	NA	19.1 U	19.5 U
PCBs (μg/kg)															
Aroclor 1016	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1221	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1232	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1242	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1248	NA	NA	NA	39 U	39 U	**200**	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1254	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1260	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1262	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U
Aroclor 1268	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	NA	NA	NA	39 U	40 U

Notes:
FD - Field Duplicate
ID - identification
J - The identification of the analyte is acceptab
the reported value is an estimate.
μg/kg - micrograms per kilogram
N/A - Not Applicable
NE - Not Established
PCB - Polychlorinated Biphenyl
PRG - Preliminary Remediation Goal
U - The analyte was not detected at or above
the reporting limit.
UJ - The analyte was not detected at or above
The reporting value
the reporting limit.
is an estimate.
SVOC - Semivolatile Organic Compound
VOC - Volatile Organic Compound

Table 2.2
Analytical Results - Subsurface Soil
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SB-01	SB-02	SB-02	SB-03
EPA Lab ID	4518-62	4518-138	4518-139	4518-68
Sample Collection Depth (ft bgs)	0.5-1	0.5-1	7-7.5	4-5
Sample Collection Date	8/4/2009	8/8/2009	8/8/2009	8/4/2009
VOCs (μg/kg)				
1,1,1-Trichloroethane	4.9 U	4.8 U	5.7 U	13 U
1,1,2,2-Tetrachloroethane	4.9 U	4.8 U	5.7 U	13 U
1,1,2-Trichloroethane	4.9 U	4.8 U	5.7 U	13 U
1,1,2-Trichlorotrifluoroethane	4.9 U	4.8 U	5.7 U	13 U
1,1-Dichloroethane	4.9 U	4.8 U	5.7 U	13 U
1,1-Dichloroethene	4.9 U	4.8 U	5.7 U	13 U
1,2,3-Trichlorobenzene	4.9 U	4.8 U	5.7 U	13 U
1,2,4-Trichlorobenzene	4.9 U	4.8 U	5.7 U	13 U
1,2-Dibromo-3-Chloropropane	4.9 U	4.8 U	5.7 U	13 U
1,2-Dibromoethane	4.9 U	4.8 U	5.7 U	13 U
1,2-Dichlorobenzene	4.9 U	4.8 U	5.7 U	13 U
1,2-Dichloroethane	4.9 U	4.8 U	5.7 U	13 U
1,2-Dichloropropane	4.9 U	4.8 U	5.7 U	13 U
1,3-Dichlorobenzene	4.9 U	4.8 U	5.7 U	13 U
1,4-Dichlorobenzene	4.9 U	4.8 U	5.7 U	13 U
2-Butanone	**15**	**10**	**15**	26 U
2-Hexanone	9.8 U	9.7 U	11 U	26 U
4-Methyl-2-Pentanone	9.8 U	9.7 U	11 U	26 U
Acetone	**61**	**78**	**84**	**99**
Benzene	4.9 U	4.8 U	5.7 U	13 U
Bromochloromethane	4.9 U	4.8 U	5.7 U	13 U
Bromodichloromethane	4.9 U	4.8 U	5.7 U	13 U
Bromoform	4.9 U	4.8 U	5.7 U	13 U
Bromomethane	4.9 U	4.8 U	5.7 U	13 U
Carbon Disulfide	4.9 U	4.8 U	5.7 U	13 U
Carbon Tetrachloride	4.9 U	4.8 U	**14**	**77**
Chlorobenzene	4.9 U	4.8 U	5.7 U	13 U
Chloroethane	4.9 U	4.8 U	5.7 U	13 U
Chloroform	**13**	**7.5**	5.7 U	13 U
Chloromethane	4.9 U	4.8 U	5.7 U	13 U
cis-1,2-Dichloroethene	4.9 U	4.8 U	5.7 U	13 U
cis-1,3-Dichloropropene	4.9 U	4.8 U	5.7 U	13 U
Cyclohexane	4.9 U	4.8 U	5.7 U	13 U
Dibromochloromethane	4.9 U	4.8 U	5.7 U	13 U
Dichlorodifluoromethane	4.9 U	4.8 U	5.7 U	13 U
Ethyl Benzene	4.9 U	4.8 U	5.7 U	13 U
Isopropylbenzene	4.9 U	4.8 U	5.7 U	13 U
m and/or p-Xylene	4.9 U	4.8 U	5.7 U	13 U
Methyl Acetate	4.9 U	4.8 U	5.7 U	13 U

Table 2.2
Analytical Results - Subsurface Soil
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SB-01	SB-02	SB-02	SB-03
EPA Lab ID	4518-62	4518-138	4518-139	4518-68
Sample Collection Depth (ft bgs)	0.5-1	0.5-1	7-7.5	4-5
Sample Collection Date	8/4/2009	8/8/2009	8/8/2009	8/4/2009
Methyl tert-butyl ether	4.9 U	4.8 U	5.7 U	13 U
Methylcyclohexane	4.9 U	4.8 U	5.7 U	13 U
Methylene Chloride	4.9 U	4.8 U	5.7 U	13 U
o-Xylene	4.9 U	4.8 U	5.7 U	13 U
Styrene	4.9 U	4.8 U	5.7 U	13 U
Tetrachloroethene	4.9 U	4.8 U	5.7 U	13 U
Toluene	4.9 U	4.8 U	5.7 U	13 U
trans-1,2-Dichloroethene	4.9 U	4.8 U	5.7 U	13 U
trans-1,3-Dichloropropene	4.9 U	4.8 U	5.7 U	13 U
Trichloroethene	4.9 U	4.8 U	5.7 U	13 U
Trichlorofluoromethane	4.9 U	4.8 U	5.7 U	13 U
Vinyl Chloride	4.9 U	4.8 U	5.7 U	13 U
SVOCs (μg/kg)				
1,2,4,5-Tetrachlorobenzene	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA
Acetophenone	NA	NA	NA	NA

Table 2.2
Analytical Results - Subsurface Soil
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SB-01	SB-02	SB-02	SB-03
EPA Lab ID	4518-62	4518-138	4518-139	4518-68
Sample Collection Depth (ft bgs)	0.5-1	0.5-1	7-7.5	4-5
Sample Collection Date	8/4/2009	8/8/2009	8/8/2009	8/4/2009
Anthracene	NA	NA	NA	NA
Atrazine	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA
Biphenyl	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	NA	NA
Caprolactam	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA
Dimethylphthalate	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA
N-nitroso-di-n-propylamine	NA	NA	NA	NA
N-nitrosodiphenylamine	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA
Phenol	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA

Table 2.2
Analytical Results - Subsurface Soil
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SB-01	SB-02	SB-02	SB-03
EPA Lab ID	**4518-62**	**4518-138**	**4518-139**	**4518-68**
Sample Collection Depth (ft bgs)	**0.5-1**	**0.5-1**	**7-7.5**	**4-5**
Sample Collection Date	**8/4/2009**	**8/8/2009**	**8/8/2009**	**8/4/2009**
A-BHC	NA	NA	NA	NA
Aldrin	NA	NA	NA	NA
B-BHC	NA	NA	NA	NA
cis-Chlordane	NA	NA	NA	NA
D-BHC	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA
Endosulfan I	NA	NA	NA	NA
Endosulfan II	NA	NA	NA	NA
Endosulfan Sulfate	NA	NA	NA	NA
Endrin	NA	NA	NA	NA
Endrin Aldehyde	NA	NA	NA	NA
Endrin Ketone	NA	NA	NA	NA
G-BHC	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA
Heptachlor Epoxide	NA	NA	NA	NA
p,p'-DDD	NA	NA	NA	NA
p,p'-DDE	NA	NA	NA	NA
p,p'-DDT	NA	NA	NA	NA
p,p'-Methoxychlor	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA
trans-Chlordane	NA	NA	NA	NA
UAA Pesticides (μg/kg)				
Malathion	NA	NA	NA	NA
Herbicides (μg/kg)				
2,4,5-T	NA	NA	NA	NA
2,4,5-TP	NA	NA	NA	NA
2,4-D	NA	NA	NA	NA
PCBs (μg/kg)				
Aroclor 1016	NA	NA	NA	NA
Aroclor 1221	NA	NA	NA	NA
Aroclor 1232	NA	NA	NA	NA
Aroclor 1242	NA	NA	NA	NA
Aroclor 1248	NA	NA	NA	NA
Aroclor 1254	NA	NA	NA	NA
Aroclor 1260	NA	NA	NA	NA
Aroclor 1262	NA	NA	NA	NA
Aroclor 1268	NA	NA	NA	NA

Notes:

FD - Field Duplicate

ID - identification

J - The identification of the analyte is acceptable; the reported value is an estimate.

μg/kg - micrograms per kilogram

N/A - Not Applicable

NE - Not Established

PCB - Polychlorinated Biphenyl

U - The analyte was not detected at or above the reporting limit.

UJ - The analyte was not detected at or above the reporting limit. The reported value is an estimate.

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Sample Location	**SD-01**	**SD-02**	**SD-03**	**SD-04**	**SD-05**	**SD-06**	**SD-08**	**SD-08**	**SD-09**	**SD-10**	**SD-11**
EPA Lab ID	**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Date	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
VOCs (μg/kg)											
1,1,1-Trichloroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2,2-Tetrachloroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2-Trichloroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2-Trichlorotrifluoroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1-Dichloroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1-Dichloroethene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2,3-Trichlorobenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 UJ
1,2,4-Trichlorobenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 UJ
1,2-Dibromo-3-Chloropropane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dibromoethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichlorobenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichloroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichloropropane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,3-Dichlorobenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,4-Dichlorobenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
2-Butanone	**27**	**17**	**13**	12 U	**23**	**12**	**24**	**24**	**30**	**23**	**33**
2-Hexanone	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
4-Methyl-2-Pentanone	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Acetone	**520 J**	**260 J**	**100 J**	12 UJ	**430 J**	**170 J**	**350 J**	**330 J**	**320 J**	**210 J**	**360 J**
Benzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromodichloromethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromoform	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromomethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Carbon Disulfide	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Carbon Tetrachloride	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chlorobenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloroethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloroform	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloromethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
cis-1,2-Dichloroethene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
cis-1,3-Dichloropropene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Cyclohexane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Dibromochloromethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Dichlorodifluoromethane	8.9 UJ	6.1 UJ	5.9 UJ	5.9 UJ	7.4 UJ	6.1 UJ	6.7 UJ	6.1 UJ	8.5 UJ	7.4 UJ	9.1 UJ
Ethyl Benzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Isopropylbenzene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
m and/or p-Xylene	18 U	12 U	12 U	12 U	15 U	12 U	13 U	12 U	17 U	15 U	18 U
Methyl Acetate	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methyl tert-butyl ether	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methylcyclohexane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methylene Chloride	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U

Sample Location	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	4525-10	4525-11	4525-1	4525-8	4525-9	4525-2	4525-3	4525-3FD	4525-5	4525-6	4525-7
Sample Collection Date	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010
Naphthalene	18 U	12 U	12 U	12 U	15 U	12 U	13 U	12 U	17 U	15 U	18 U
o-Xylene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Styrene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Tetrachloroethene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Toluene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	**37**	6.1 U	8.5 U	7.4 U	9.1 U
trans-1,2-Dichloroethene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
trans-1,3-Dichloropropene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Trichloroethene	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Trichlorofluoromethane	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Vinyl Chloride	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
SVOCs (μg/kg)											
1,2,4-Trichlorobenzene	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
1,2-Dichlorobenzene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
1,3-Dichlorobenzene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
1,4-Dichlorobenzene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2,4,5-Trichlorophenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4,6-Trichlorophenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4-Dichlorophenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4-Dimethylphenol	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
2,4-Dinitrophenol	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
2,4-Dinitrotoluene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
2,6-Dinitrotoluene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Chloronaphthalene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Chlorophenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2-Methylnaphthalene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Methylphenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2-Nitroaniline	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
2-Nitrophenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
3,3'-Dichlorobenzidine	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
3-Nitroaniline	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
4,6-Dinitro-2-methylphenol	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
4-Bromophenyl-phenylether	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
4-Chloro-3-methylphenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
4-Chloroaniline	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
4-Chlorophenyl-phenylether	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
4-Methylphenol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
4-Nitroaniline	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
4-Nitrophenol	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
Acenaphthene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Acenaphthylene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Anthracene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U

Table 2.3
Analytical Results - Sediment
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	4525-10	4525-11	4525-1	4525-8	4525-9	4525-2	4525-3	4525-3FD	4525-5	4525-6	4525-7
Sample Collection Date	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010
Benzo(a)anthracene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzo(a)pyrene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(b)fluoranthene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(g,h,i)perylene	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Benzo(k)fluoranthene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzoic acid	**590 J**	500 UJ	990 UJ	970 U	460 UJ	450 UJ	440 UJ	440 UJ	1900 U	940 U	930 U
Benzyl alcohol	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
bis(2-Chloroethoxy)methane	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
bis(2-Chloroethyl)ether	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
bis(2-Chloroisopropyl)ether	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
bis(2-Ethylhexyl)phthalate	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Butylbenzylphthalate	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Carbazole	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Chrysene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Dibenz(a,h)anthracene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Dibenzofuran	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Diethylphthalate	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Dimethylphthalate	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Di-n-butylphthalate	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Di-n-octylphthalate	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Fluoranthene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Fluorene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Hexachlorobenzene	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachlorobutadiene	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachlorocyclopentadiene	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachloroethane	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Indeno(1,2,3-cd)pyrene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Isophorone	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Naphthalene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Nitrobenzene	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
N-nitroso-di-n-propylamine	250 UJ	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
N-nitrosodiphenylamine	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pentachlorophenol	250 UJ	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
Phenanthrene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Phenol	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Pyrene	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pesticides (μg/kg)											
A-BHC	0.35 U	0.35 U	0.37 U	0.35 U	0.35 U	0.33 U	0.32 U	0.33 U	0.35 U	0.35 U	0.34 U
Aldrin	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	0.69 U	0.7 U	0.68 U
B-BHC	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U
Chlordane, technical	23 U	23 U	4.9 U	24 U	23 U	4.4 U	21 U	22 U	23 U	**12 J**	4.5 U

Sample Location	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Date	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
D-BHC	0.46 U	0.46 U	0.49 U	0.47 U	0.46 U	0.44 U	0.42 U	0.44 U	0.46 U	0.47 U	0.45 U
Dieldrin	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	**0.84**	**13**	0.68 U
Endosulfan I	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	0.69 U	0.7 U	0.68 U
Endosulfan II	0.92 U	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	4.5 UJ
Endosulfan Sulfate	4.6 U	4.6 U	0.98 U	4.7 U	4.6 U	0.87 U	4.2 U	4.4 U	4.6 U	9.4 U	0.91 U
Endrin	4.6 U	4.6 U	0.98 U	4.7 U	4.6 U	0.87 UJ	4.2 U	4.4 U	4.6 U	9.4 U	0.91 U
Endrin Aldehyde	5.8 U	5.8 U	1.2 U	5.9 U	5.8 U	1.1 U	5.3 U	5.5 U	5.8 U	12 U	1.1 UJ
Endrin Ketone	4.6 U	4.6 U	4.9 U	4.7 U	4.6 U	0.87 UJ	4.2 U	4.4 U	4.6 U	9.4 U	0.91 UJ
G-BHC	0.46 U	0.46 U	0.49 U	0.47 U	0.46 U	0.44 U	0.42 U	0.44 U	0.46 U	0.47 U	0.45 U
Heptachlor	3.5 U	3.5 U	0.73 U	3.5 U	3.5 U	0.65 UJ	3.2 U	3.3 U	3.5 U	7 U	3.4 U
Heptachlor Epoxide	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	3.2 U	0.66 U	0.69 U	0.7 U	0.68 U
p,p'-DDD	0.92 U	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	0.91 U
p,p'-DDE	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	**2.1 J**	1.1 U
p,p'-DDT	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	**2.1 J**	5.7 U
p,p'-Methoxychlor	2.3 UJ	2.3 UJ	2.4 UJ	2.4 UJ	2.3 UJ	2.2 UJ	2.1 UJ	2.2 UJ	2.3 UJ	2.3 UJ	11 U
Toxaphene	120 U	120 U	120 U	120 U	120 U	110 U	110 U	110 U	120 U	230 U	114 U
UAA Pesticides (μg/kg)											
Malathion	4.6 U	4.6 U	4.9 U	4.7 U	4.6 U	4.36 U	4.2 U	4.4 U	4.6 U	4.7 U	4.5 U
Herbicides (μg/kg)											
2,4,5-T	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TP	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-D	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PCBs (μg/kg)											
Aroclor 1016	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1221	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1232	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1242	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1248	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1254	12 U	12 U	12 U	12 U	12 U	11 U	11 U	11 U	12 U	12 U	11 U
Aroclor 1260	58 U	58 U	61 U	59 U	58 U	54 U	53 U	55 U	58 U	120 U	57 U
Percent Solids											
Percent Solids	**80.6**	**80.3**	**80.9**	**81.9**	**85.6**	**86.8**	**90**	**90.1**	**83.1**	**84.9**	**85.6**

Notes:

FD - Field Duplicate
ID - identification
J - The identification of the analyte is acceptable; the reported value is an estimate.
μg/kg - micrograms per kilogram
N/A - Not Applicable
NE - Not Established

PCB - Polychlorinated Biphenyl
U - The analyte was not detected at or above the reporting limit.
UJ - The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.
SVOC - Semivolatile Organic Compound
VOC - Volatile Organic Compound

Sample Location	**SB-09**	**SB-09**	**SB-09**	**SB-12**	**SB-12**	**SB-13**	**SB-13**	**SB-13**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-29**	**SB-34**	**SB-35**	**SB-36**	**SB-36**	**SB-36**	**SB-37**
EPA Lab ID	**4520-14**	**4520-14FD**	**4520-13**	**4520-10**	**4520-9**	**4520-8**	**4520-6**	**4520-6FD**	**4519-4**	**4520-12**	**4519-2**	**4519-2FD**	**4520-11**	**4734-5**	**4734-1**	**4734-4**	**4734-3**	**4734-2**	**4734-16**
Chemsolutions Lab ID																			
Sample Collection Depth (ft bgs)	**121-125**	**121-125**	**126-130**	**121-125**	**126-130**	**120-124**	**125-129**	**125-129**	**119-123**	**119-123**	**124-128**	**124-128**	**124-128**	**126-130**	**124-128**	**116-120**	**120-124**	**125-129**	**120-124**
Sample Collection Date	**8/12/2009**	**8/12/2009**	**8/12/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/10/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**8/11/2009**	**12/16/2009**	**12/15/2009**	**12/16/2009**	**12/16/2009**	**12/16/2009**	**12/18/2009**
EDB/DBCP (µg/L)																			
1,2-Dibromo-3-Chloropropane														0.020 U	0.020 UJ	0.020 U	0.020 U	0.020 UJ	0.020 U
1,2-Dibromoethane	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U		0.020 U			0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
VOCs (µg/L)																			
1,1,1-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1,2-Trichlorotrifluoroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2,3-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2-Dibromo-3-Chloropropane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U		5.0 U			5.0 U						
1,2-Dibromoethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U						
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U		5.0 U			**9.0 J**	5.0 U	**7.5**	5.0 U	5.0 U	5.0 U	5.0 UJ
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U		5.0 U			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ
4-Methyl-2-Pentanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U		5.0 U			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ
Acetone	5.0 U	5.0 U	**18 J**	5.0 U	5.0 U	5.0 U	**5.7 J**	5.0 U		5.0 U			**55 J**	5.0 U	**9.6**	5.0 U	5.0 U	5.0 U	**9.7 J**
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	**0.86 J**
Bromochloromethane														0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Carbon Disulfide	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	**10**	1.0 U	1.0 U	1.0 U		**72**			**30**	**5**	**31**	**6.3**	**1.8**	0.50 U	**24 J**
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	**0.83 J**
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	**2**	1.0 U	1.0 U	1.0 U		**9.9**			**18**	**1.2**	**4.9**	**3.3**	0.50 U	0.50 U	**7.0 J**
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Cyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Dichlorodifluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Ethyl Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Isopropylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
m and/or p-Xylene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U		2.0 U			2.0 U	0.50 U	**1.1**	0.50 U	0.50 U	0.50 U	0.50 UJ
Methyl Acetate	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U		5.0 U			5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Methyl tert-butyl ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Methylcyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 UJ	0.50 UJ
Methylene Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	2.6 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Naphthalene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U		2.0 U			2.0 U						
o-Xylene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	**0.51**	0.50 U	0.50 U	0.50 U	0.50 UJ
Styrene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Tetrachloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	**1.5**	**1.9 J**	0.50 U	0.50 U	**1.7**	0.50 UJ
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
trans-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Trichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U			1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ

Sample Location	SB-37	SB-37	SB-37	SB-38	SB-38	SB-38	SB-38	SB-38	SB-38	SB-39	SB-39	SB-40	SB-40	SB-40	SB-40	SB-40	SB-40	MW-3A	MW-3B
EPA Lab ID		4734-15		4734-13		4734-12		4734-11		4734-14		4734-19		4734-17	4734-17FD			4931-5	4931-6
Chemsolutions Lab ID	SB-37:120-124		SB-37:125-129		SB-38:124-128		SB-38:130-134		SB-38:138-142		SB-39:136-140		SB-40:120-124			SB-40:125-129	SB-40:325-329		
Sample Collection Depth (ft bgs)	120-124	125-129	125-129	124-128	124-128	130-134	130-134	138-142	138-142	136-140	136-140	120-124	120-124	125-129	125-129	125-129	125-129		
Sample Collection Date	12/18/2009	12/18/2009	12/18/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009	06/19/2010	06/19/2010
EDB/DBCP (μg/L)																			
1,2-Dibromo-3-Chloropropane		0.020 U		0.020 U		0.020 U		0.020 U		0.020 U		0.020 U		0.020 U	0.020 U				
1,2-Dibromoethane		0.020 U		0.020 U		0.020 U		0.020 U		0.020 U		0.020 U		0.020 U	0.020 U				
VOCs (μg/L)																			
1,1,1-Trichloroethane	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	1.0 U
1,1,2,2-Tetrachloroethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,1,2-Trichloroethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,1,2-Trichlorotrifluoroethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,1-Dichloroethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,1-Dichloroethene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,2,3-Trichlorobenzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		N/A R		0.50 U	0.50 U			0.50 U	1.0 U
1,2,4-Trichlorobenzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		N/A R		0.50 U	0.50 U			0.50 U	1.0 U
1,2-Dibromo-3-Chloropropane																		0.50 U	1.0 U
1,2-Dibromoethane	2 U		2 U		2 U		2 U		2 U		2 U		2 U			2 U	2 U	0.50 U	1.0 U
1,2-Dichlorobenzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		N/A R		0.50 U	0.50 U			0.50 U	1.0 U
1,2-Dichloroethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,2-Dichloropropane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
1,3-Dichlorobenzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		N/A R		0.50 U	0.50 U			0.50 U	1.0 U
1,4-Dichlorobenzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		N/A R		0.50 U	0.50 U			0.50 U	1.0 U
2-Butanone		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	5.0 U			5.0 U	10 U
2-Hexanone		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	5.0 U			5.0 U	10 U
4-Methyl-2-Pentanone		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U		5.0 U	5.0 U			5.0 U	10 U
Acetone		**19**		5.0 U		5.0 U		**9.8**		5.0 U		5.0 U		**9**	**13**			5.0 U	10 U
Benzene		**4**		0.50 U		0.50 U		0.50 U		**2.1**		**1.8**		**2.7**	**3.8**			0.50 U	1.0 U
Bromochloromethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Bromodichloromethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Bromoform		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		N/A R		0.50 U	0.50 U			0.50 U	1.0 U
Bromomethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Carbon Disulfide	2 U	**0.82**	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	1.0 U
Carbon Tetrachloride	**29**	**13**	**12**	**77**	**92**	**63**	**100**	**97**	**130**	0.50 U	5 U	**10**	**13**	**4.5**	**3.5**	**4.3 J**	**4.4 J**	**7.4**	**190**
Chlorobenzene		**2.5**		0.50 U		0.50 U		0.50 U		**0.86**		**0.94**		**1.8**	**2.5**			0.50 U	1.0 U
Chloroethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Chloroform	**1.9 J**	**4.7**	**3.5**	**3.3**	**3.1**	**9.6**	**3.7**	**7.2**	**3.4**	0.50 U	2 U	**3.8**	2 U	**1.4**	**2.1**	2 U	2 U	0.50 U	1.0 U
Chloromethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
cis-1,2-Dichloroethene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
cis-1,3-Dichloropropene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Cyclohexane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Dibromochloromethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Dichlorodifluoromethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Ethyl Benzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Isopropylbenzene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
m and/or p-Xylene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Methyl Acetate		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Methyl tert-butyl ether		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Methylcyclohexane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Methylene Chloride		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Naphthalene																			
o-Xylene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Styrene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Tetrachloroethene	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	1.0 U
Toluene		0.50 U		0.50 U		0.50 U		**1.7**		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
trans-1,2-Dichloroethene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
trans-1,3-Dichloropropene		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Trichloroethene	2 U	0.50 U	2 U	**6.8**	**7.3**	**4.9**	**5**	0.50 U	2 U	0.50 U	2 U	0.50 U	2 U	0.50 U	0.50 U	2 U	2 U	0.50 U	1.0 U
Trichlorofluoromethane		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U
Vinyl Chloride		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U		0.50 U	0.50 U			0.50 U	1.0 U

Sample Location	**MW-3B**	**MW-3D**	**MW-3E**	**MW-4A**	**MW-4B**	**MW-5A**	**MW-5B**	**MW-5B**	**MW-5D**	**MW-6A**	**MW-6D**	**MW-6D**	**MW-6E**	**MW-13C**	**MW-13C**	**MW-13E**	**MW-19A**	**MW-19C**	**MW-20A**
EPA Lab ID	**4931-6FD**	**4931-8**	**4931-9**	**4931-27**	**4931-28**	**4931-32**	**4931-30**	**4931-30FD**	**4931-33**	**4931-36**	**4931-34**	**4931-34FD**	**4931-37**	**4931-24**	**4931-24FD**	**4931-26**	**4931-17**	**4931-16**	**4931-18**
Chemsolutions Lab ID																			
Sample Collection Depth (ft bgs)																			
Sample Collection Date	**06/19/2010**	**06/19/2010**	**06/19/2010**	**06/18/2010**	**06/18/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/20/2010**	**06/18/2010**	**06/18/2010**	**06/18/2010**	**06/17/2010**	**06/17/2010**	**06/17/2010**
EDB/DBCP (μg/L)																			
1,2-Dibromo-3-Chloropropane																			
1,2-Dibromoethane																			
VOCs (μg/L)																			
1,1,1-Trichloroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	10 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	10 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	10 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	5.0 U	**76**	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	**170**	0.50 U	0.50 U	**12**	**1300**	**13**	**24**	**27**	0.50 U	**17**	0.50 U	0.50 U	**33**	**160**	**170**	0.50 U	**69**	0.50 U	0.50 U
Chlorobenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	**2.2**	0.50 U	**0.85**
Chloromethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Naphthalene																			
o-Xylene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	**3.7**	0.50 U	0.50 U
Trichlorofluoromethane	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	1.0 U	0.50 U	0.50 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U

Sample Location	MW-20C	MW-20D	MW-20E	MW-30A	MW-30C	MW-30D	MW-30E	MW-31A	MW-31C
EPA Lab ID	4931-14	4931-13	4931-15	4931-3	4931-2	4931-1	4931-12	4931-11	4931-10
Chemsolutions Lab ID									
Sample Collection Depth (ft bgs)									
Sample Collection Date	06/16/2010	06/16/2010	06/16/2010	06/16/2010	06/16/2010	06/16/2010	06/16/2010	06/15/2010	06/15/2010
EDB/DBCP (μg/L)									
1,2-Dibromo-3-Chloropropane									
1,2-Dibromoethane									
VOCs (μg/L)									
1,1,1-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**9.8**	5.0 U	5.0 U	5.0 U
Benzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	0.50 U	**0.79**	0.50 U
Carbon Tetrachloride	0.50 U	0.50 U	0.50 U	**90**	0.50 U	0.50 U	0.50 U	**11**	0.50 U
Chlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	0.50 U	0.50 U	0.50 U	**2.8**	**0.98**	**2.5**	**3.1**	**7.9**	0.50 U
Chloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m and/or p-Xylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.65**	0.50 U	**2.4**	0.50 U
Methyl tert-butyl ether	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Naphthalene									
o-Xylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	**0.6**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	**TS1-01**	**TS1-01**	**TS1-01**	**TS1-01**	**TS1-01**	**TS1-01**	**TS1-02**	**TS1-02**	**TS1-02**	**TS1-02**	**TS1-02**	**TS1-02**	**TS1-02**	**MW-105A**	**MW-105A**	**MW-105C**	**MW-105C**
Sample ID	**4522-72**	**4522-71**	**4522-69**	**4522-69FD**	**4522-68**	**4522-67**	**4522-49**	**4522-48**	**4522-47**	**4522-46**	**4522-45**	**4522-43**	**4522-43FD**				
EPA Lab ID														**3649-25**	**4145-14**	**3649-32**	**4145-13**
Sample Depth (ft bgs)	**133-137**	**143-147**	**158-162**	**158-162**	**168-172**	**178-182**	**124-128**	**134-138**	**143-147**	**159-163**	**169-173**	**181-185**	**181-185**	**123**	**123**	**170**	**170**
Sample Collection Date	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**8/8/2008**	**11/19/2080**	**8/8/2008**	**11/19/2008**
VOCs (μg/L)																	
1,1,1,2-Tetrachloroethane																	
1,1,1-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**4.5**	1 U	0.50 U	1 U
1,1,2,2-Tetrachloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5 U	0.50 U	5 U
1,1,2-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,1,2-Trichlorotrifluoroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,1-Dichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,1-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,1-Dichloropropene																	
1,2,3-Trichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,2,3-Trichloropropane																	
1,2,4-Trichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,2,4-Trimethylbenzene																	
1,2-Dibromo-3-chloropropane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5 U	0.50 U	5 U
1,2-Dibromoethane	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.50 U	1 U	0.50 U	1 U
1,2-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,2-Dichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,2-Dichloropropane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,3,5-Trimethylbenzene																	
1,3-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,3-Dichloropropane																	
1,4-Dichlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
1,4-Dioxane																	
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**12**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U	5 U
2-Chlorotoluene																	
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2 U	5.0 U	2 U
4-Chlorotoluene																	
4-Methyl-2-pentanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1 U	5.0 U	1 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U	5 U
Benzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Bromobenzene																	
Bromochloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U		0.50 U	
Bromodichloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Bromoform	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	TS1-01	TS1-01	TS1-01	TS1-01	TS1-01	TS1-01	TS1-02	TS1-02	TS1-02	TS1-02	TS1-02	TS1-02	TS1-02	MW-105A	MW-105A	MW-105C	MW-105C
Sample ID	**4522-72**	**4522-71**	**4522-69**	**4522-69FD**	**4522-68**	**4522-67**	**4522-49**	**4522-48**	**4522-47**	**4522-46**	**4522-45**	**4522-43**	**4522-43FD**				
EPA Lab ID														**3649-25**	**4145-14**	**3649-32**	**4145-13**
Sample Depth (ft bgs)	**133-137**	**143-147**	**158-162**	**158-162**	**168-172**	**178-182**	**124-128**	**134-138**	**143-147**	**159-163**	**169-173**	**181-185**	**181-185**	**123**	**123**	**170**	**170**
Sample Collection Date	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/7/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**9/3/2009**	**8/8/2008**	**11/19/2080**	**8/8/2008**	**11/19/2008**
VOCs (μg/L)																	
Bromomethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Carbon disulfide	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Carbon tetrachloride	**41**	**150**	**450**	**400**	**380**	**410**	**20**	**44**	**27**	**100**	**58**	**24**	**19**	**0.61**	**5**	**320**	**210**
Chlorobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Chloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Chloroform	**59**	**57**	**12**	**140**	**18**	**110**	**4.5**	**5.8**	**32**	**110**	**3.8**	**2.4**	**2.1**	0.50 U	1 U	**2.9**	**1.9**
Chloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
cis-1,2-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
cis-1,3-Dichloropropene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Cyclohexane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Dibromochloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Dibromomethane																	
Dichlorodifluoromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 UJ	0.50 U	1 UJ
Diisopropyl Ether																	
Ethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Hexachlorobutadiene																	
Hexane																	
Isopropylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
m,p-Xylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Methyl Acetate	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5 U	0.50 U	5 U
methyl tert-butyl ether	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Methylcyclohexane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Methylene chloride	**0.52**	**0.57**	0.50 U	**0.77**	0.50 U	**0.59**	0.50 U	0.50 U	0.50 U	**0.93**	**0.59**	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Naphthalene															2 U		2 U
n-butyl benzene																	
n-propyl benzene																	
o-Xylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
p-Isopropyltoluene																	
sec-butyl benzene																	
Styrene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
tert-Butylbenzene																	
Tetrachloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Tetrahydrofuran																	
Toluene	0.50 U	0.50 U	**0.62**	0.50 U	0.50 U	0.50 U	**0.61**	0.50 U	**0.78**	0.50 U	**0.57**	**0.95**	**0.89**	0.50 U	1 U	0.50 U	1 U
trans-1,2-Dichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
trans-1,3-Dichloropropene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Trichloroethene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Trichlorofluoromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U
Vinyl chloride	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1 U	0.50 U	1 U

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	MW-105C	MW-105C	MW-105D	MW-105D	MW-105D	MW-105D	MW-46-D1	MW-46-D2	1665 S. Wabash	1665 S. Wabash	1665 S. Wabash	1695 S. Wabash	1695 S. Wabash
Sample ID		4932-17				4932-11	4932-6	4932-7	ROSE-1Q03	ROSE-2Q03	ROSE-4Q03	HIMMELBER G-3Q01	HIMMELBER G-I-2Q03
EPA Lab ID	4885-46		3649-33	4145-12	4885-45								
Sample Depth (ft bgs)	170	170	202	202	202	202							
Sample Collection Date	05/12/10	06/19/2010	8/8/2008	11/19/2008	05/12/10	06/19/2010	06/17/2010	06/17/2010	2/19/2003	7/17/2003	12/9/2003	9/25/2001	7/24/2003
VOCs (µg/L)													
1,1,1,2-Tetrachloroethane													
1,1,1-Trichloroethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,1,2,2-Tetrachloroethane	1.0 U	0.50 U	0.50 U	5 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,1,2-Trichloroethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,1,2-Trichlorotrifluoroethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,1-Dichloroethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,1-Dichloroethene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,1-Dichloropropene													
1,2,3-Trichlorobenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,2,3-Trichloropropane													
1,2,4-Trichlorobenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,2,4-Trimethylbenzene													
1,2-Dibromo-3-chloropropane	1.0 U	0.50 U	0.50 U	5 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,2-Dibromoethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,2-Dichlorobenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,2-Dichloroethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,3,5-Trimethylbenzene													
1,3-Dichlorobenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,3-Dichloropropane													
1,4-Dichlorobenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
1,4-Dioxane													
2-Butanone	10 U	5.0 U	5.0 U	5 U	5.0 U	5.0 U	10 U	5.0 U					
2-Chlorotoluene													
2-Hexanone	10 U	5.0 U	5.0 U	2 U	5.0 U	5.0 U	10 U	5.0 U					
4-Chlorotoluene													
4-Methyl-2-pentanone	10 U	5.0 U	5.0 U	1 U	5.0 U	5.0 U	10 U	5.0 U					
Acetone	10 U	5.0 U	5.0 U	5 U	5.0 U	5.0 U	10 U	5.0 U					
Benzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Bromobenzene													
Bromochloromethane		0.50 U	0.50 U			0.50 U	1.0 U	0.50 U					
Bromodichloromethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Bromoform	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	**MW-105C**	**MW-105C**	**MW-105D**	**MW-105D**	**MW-105D**	**MW-105D**	**MW-46-D1**	**MW-46-D2**	**1665 S. Wabash**	**1665 S. Wabash**	**1665 S. Wabash**	**1695 S. Wabash**	**1695 S. Wabash**
Sample ID		**4932-17**				**4932-11**	**4932-6**	**4932-7**	**[redacted]-1Q03**	**[redacted]E-2Q03**	**[redacted]-4Q03**	**[redacted]R G-3Q01**	**[redacted]R G-I-2Q03**
EPA Lab ID	**4885-46**		**3649-33**	**4145-12**	**4885-45**								
Sample Depth (ft bgs)	**170**	**170**	**202**	**202**	**202**	**202**							
Sample Collection Date	**05/12/10**	**06/19/2010**	**8/8/2008**	**11/19/2008**	**05/12/10**	**06/19/2010**	**06/17/2010**	**06/17/2010**	**2/19/2003**	**7/17/2003**	**12/9/2003**	**9/25/2001**	**7/24/2003**
VOCs (μg/L)													
Bromomethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Carbon disulfide	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U				5 U	
Carbon tetrachloride	**170**	**97**	**10**	**40**	**19**	**23**	**250**	**100**	**710 D**	**150**	**480 D**	**14**	**19**
Chlorobenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Chloroethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Chloroform	**1.6**	**1.5**	0.50 U	1 U	0.50 U	0.50 U	**4.3**	**0.83**	**2.3**	1 U	**1.3**	1 U	1 U
Chloromethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U	1 U	1 U	1 U	5 U	1 U
cis-1,2-Dichloroethene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
cis-1,3-Dichloropropene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Cyclohexane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Dibromochloromethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Dibromomethane													
Dichlorodifluoromethane	1.0 U	0.50 U	0.50 U	1 UJ	0.50 U	0.50 U	1.0 U	0.50 U					
Diisopropyl Ether													
Ethylbenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Hexachlorobutadiene													
Hexane													
Isopropylbenzene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
m,p-Xylene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Methyl Acetate	1.0 U	0.50 U	0.50 U	5 U	0.50 U	0.50 U	1.0 U	0.50 U					
methyl tert-butyl ether	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Methylcyclohexane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Methylene chloride	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U	5 U	5 U	5 U	5 U	5 U
Naphthalene				2 U									
n-butyl benzene													
n-propyl benzene													
o-Xylene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
p-Isopropyltoluene													
sec-butyl benzene													
Styrene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
tert-Butylbenzene													
Tetrachloroethene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran													
Toluene	1.0 U	0.50 U	**0.51**	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
trans-1,2-Dichloroethene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
trans-1,3-Dichloropropene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Trichloroethene	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					
Vinyl chloride	1.0 U	0.50 U	0.50 U	1 U	0.50 U	0.50 U	1.0 U	0.50 U					

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1695 S. Wabash	1725 S. Wabash	1725 S. Wabash	1725 S. Wabash	1725 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash
Sample ID	HIMMELBER-I-4Q03	B[redacted]N-1Q03	[redacted]-2Q03	[redacted]-I-3Q03	[redacted]-I-4Q03	[redacted]B-1Q02	[redacted]B-I-4Q02	[redacted]-I-2Q03	[redacted]-3Q03	[redacted]B-I-1Q04	[redacted]-I-2Q04	[redacted]-I-3Q04	[redacted]-I-4Q04
EPA Lab ID													
Sample Depth (ft bgs)													
Sample Collection Date	12/10/2003	2/20/2003	7/23/2003	9/25/2003	12/10/2003	2/18/2002	9/18/2002	7/15/2003	9/25/2003	2/5/2004	4/8/2004	7/15/2004	10/21/2004
VOCs (μg/L)													
1,1,1,2-Tetrachloroethane													
1,1,1-Trichloroethane													
1,1,2,2-Tetrachloroethane													
1,1,2-Trichloroethane													
1,1,2-Trichlorotrifluoroethane													
1,1-Dichloroethane													
1,1-Dichloroethene													
1,1-Dichloropropene													
1,2,3-Trichlorobenzene													
1,2,3-Trichloropropane													
1,2,4-Trichlorobenzene													
1,2,4-Trimethylbenzene													
1,2-Dibromo-3-chloropropane													
1,2-Dibromoethane													
1,2-Dichlorobenzene													
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	**3**	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane													
1,3,5-Trimethylbenzene													
1,3-Dichlorobenzene													
1,3-Dichloropropane													
1,4-Dichlorobenzene													
1,4-Dioxane													
2-Butanone													
2-Chlorotoluene													
2-Hexanone													
4-Chlorotoluene													
4-Methyl-2-pentanone													
Acetone													
Benzene													
Bromobenzene													
Bromochloromethane													
Bromodichloromethane													
Bromoform													

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1695 S. Wabash	1725 S. Wabash	1725 S. Wabash	1725 S. Wabash	1725 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash
Sample ID	[redacted] I-4Q03	[redacted]-1Q03	[redacted]N-2Q03	[redacted]-I-3Q03	[redacted]-I-4Q03	[redacted]-1Q02	[redacted]B-I-4Q02	[redacted]B-I-2Q03	[redacted]I-3Q03	[redacted]-I-1Q04	[redacted]-I-2Q04	[redacted]-I-3Q04	[redacted]B-I-4Q04
EPA Lab ID													
Sample Depth (ft bgs)													
Sample Collection Date	12/10/2003	2/20/2003	7/23/2003	9/25/2003	12/10/2003	2/18/2002	9/18/2002	7/15/2003	9/25/2003	2/5/2004	4/8/2004	7/15/2004	10/21/2004
VOCs (μg/L)													
Bromomethane													
Carbon disulfide													
Carbon tetrachloride	**13**	**140 D**	**910 D**	**960 D**	**760 D**	**89 D**	**50**	**82**	**48**	**35**	**72**	**97**	**20**
Chlorobenzene													
Chloroethane													
Chloroform	**1.1**	**5.5**	**2.5**	**2.5**	**2.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene													
cis-1,3-Dichloropropene													
Cyclohexane													
Dibromochloromethane													
Dibromomethane													
Dichlorodifluoromethane													
Diisopropyl Ether													
Ethylbenzene													
Hexachlorobutadiene													
Hexane													
Isopropylbenzene													
m,p-Xylene													
Methyl Acetate													
methyl tert-butyl ether													
Methylcyclohexane													
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene													
n-butyl benzene													
n-propyl benzene													
o-Xylene													
p-Isopropyltoluene													
sec-butyl benzene													
Styrene													
tert-Butylbenzene													
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran													
Toluene													
trans-1,2-Dichloroethene													
trans-1,3-Dichloropropene													
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane													
Vinyl chloride													

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1900 S. Wabash
Sample ID	[redacted]-1Q05	[redacted]-I-2Q05	[redacted]B-I-3Q05	[redacted]B-I-4Q05	[redacted]B-I-1Q06	1820SWABASH	[redacted]N-2Q02	[redacted]-I-3Q02	[redacted]-I-2Q03	[redacted] 3Q03	[redacted]-I-1Q04	[redacted]-I-2Q04	[redacted]-I-3Q04	[redacted]-I-4Q01
EPA Lab ID														
Sample Depth (ft bgs)														
Sample Collection Date	2/24/2005	6/1/2005	9/1/2005	11/3/2005	1/27/2006	8/13/2008	7/16/2002	8/10/2002	7/17/2003	9/25/2003	2/5/2004	4/8/2004	7/15/2004	11/15/2001
VOCs (µg/L)														
1,1,1,2-Tetrachloroethane														
1,1,1-Trichloroethane						0.5 U								
1,1,2,2-Tetrachloroethane														
1,1,2-Trichloroethane														
1,1,2-Trichlorotrifluoroethane														
1,1-Dichloroethane						0.5 U								
1,1-Dichloroethene														
1,1-Dichloropropene														
1,2,3-Trichlorobenzene														
1,2,3-Trichloropropane														
1,2,4-Trichlorobenzene														
1,2,4-Trimethylbenzene														
1,2-Dibromo-3-chloropropane														
1,2-Dibromoethane														
1,2-Dichlorobenzene														
1,2-Dichloroethane	1 U					0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane														
1,3,5-Trimethylbenzene														
1,3-Dichlorobenzene														
1,3-Dichloropropane														
1,4-Dichlorobenzene														
1,4-Dioxane														
2-Butanone														
2-Chlorotoluene														
2-Hexanone														
4-Chlorotoluene														
4-Methyl-2-pentanone														
Acetone														
Benzene														
Bromobenzene														
Bromochloromethane														
Bromodichloromethane														
Bromoform														

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1820 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1870 S. Wabash	1900 S. Wabash
Sample ID	[redacted]-1Q05	[redacted]-2Q05	[redacted]-3Q05	[redacted]I-4Q05	[redacted]-I-1Q06	1820SWABASH	[redacted] 2Q02	[redacted]-I- 3Q02	[redacted]N-I- 2Q03	[redacted]-I- 3Q03	[redacted]-I- 1Q04	[redacted]-I- 2Q04	[redacted]-I- 3Q04	[redacted]-I- 4Q01
EPA Lab ID														
Sample Depth (ft bgs)														
Sample Collection Date	2/24/2005	6/1/2005	9/1/2005	11/3/2005	1/27/2006	8/13/2008	7/16/2002	8/10/2002	7/17/2003	9/25/2003	2/5/2004	4/8/2004	7/15/2004	11/15/2001
VOCs (µg/L)														
Bromomethane														
Carbon disulfide	10 U				0.5 U	0.5 U								5 U
Carbon tetrachloride	**22**	**19**	**25**	**36**	**49**	**19**	**49**	**36**	**33**	**76**	**74**	**78**	**74**	**18**
Chlorobenzene														
Chloroethane														
Chloroform	1 U				**0.54**	**0.53**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U				0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U
cis-1,2-Dichloroethene						0.5 U								
cis-1,3-Dichloropropene														
Cyclohexane														
Dibromochloromethane														
Dibromomethane														
Dichlorodifluoromethane						0.5 U								
Diisopropyl Ether														
Ethylbenzene														
Hexachlorobutadiene														
Hexane														
Isopropylbenzene														
m,p-Xylene														
Methyl Acetate														
methyl tert-butyl ether														
Methylcyclohexane														
Methylene chloride	5 U				0.5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene														
n-butyl benzene														
n-propyl benzene														
o-Xylene														
p-Isopropyltoluene														
sec-butyl benzene														
Styrene														
tert-Butylbenzene														
Tetrachloroethene	1 U					0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran														
Toluene						0.5 U								
trans-1,2-Dichloroethene														
trans-1,3-Dichloropropene														
Trichloroethene	1 U					0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane						0.5 U								
Vinyl chloride														

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1900 S. Wabash	1900 S. Wabash	1900 S. Wabash	1900 S. Wabash	1900 S. Wabash	1900 S. Wabash	1900 S. Wabash	1900 S. Wabash	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH
Sample ID	[redacted]-I- 3Q02	[redacted]-I- 1Q03	[redacted]-I- 2Q03	E[redacted]N-I- 3Q03	[redacted] 4Q03	E[redacted] 1Q04	E[redacted]-I- 2Q04	[redacted] 3Q04	[redacted]-I- 4Q04	[redacted]-I- 1Q05	[redacted]-I- 3Q05	[redacted]- 4Q05	[redacted]-I- 1Q06	[redacted]N-I- 2Q06	[redacted]-I- 3Q06
EPA Lab ID															
Sample Depth (ft bgs)															
Sample Collection Date	8/9/2002	1/23/2003	7/24/2003	9/25/2003	12/10/2003	2/5/2004	4/7/2004	7/15/2004	10/21/2004	2/23/2005	9/1/2005	11/2/2005	1/26/2006	4/19/2006	8/9/2006
VOCs (µg/L)															
1,1,1,2-Tetrachloroethane															
1,1,1-Trichloroethane															0.5 U
1,1,2,2-Tetrachloroethane															
1,1,2-Trichloroethane															
1,1,2-Trichlorotrifluoroethane															
1,1-Dichloroethane															0.5 U
1,1-Dichloroethene															
1,1-Dichloropropene															
1,2,3-Trichlorobenzene															
1,2,3-Trichloropropane															
1,2,4-Trichlorobenzene															
1,2,4-Trimethylbenzene															
1,2-Dibromo-3-chloropropane															
1,2-Dibromoethane															
1,2-Dichlorobenzene															
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					0.5 U
1,2-Dichloropropane															
1,3,5-Trimethylbenzene															
1,3-Dichlorobenzene															
1,3-Dichloropropane															
1,4-Dichlorobenzene															
1,4-Dioxane															
2-Butanone															
2-Chlorotoluene															
2-Hexanone															
4-Chlorotoluene															
4-Methyl-2-pentanone															
Acetone															
Benzene															
Bromobenzene															
Bromochloromethane															
Bromodichloromethane															
Bromoform															

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S. Wabash**	**1900 S WABASH**	**1900 S WABASH**	**1900 S WABASH**	**1900 S WABASH**	**1900 S WABASH**	**1900 S WABASH**	**1900 S WABASH**
Sample ID	**[redacted]- 3Q02**	**[redacted]- 1Q03**	**[redacted]N-I- 2Q03**	**[redacted]-I- 3Q03**	**[redacted]- 4Q03**	**[redacted]N- 1Q04**	**[redacted]-I- 2Q04**	**[redacted]-I- 3Q04**	**[redacted]-I- 4Q04**	**[redacted] 1Q05**	**[redacted] 3Q05**	**[redacted] 4Q05**	**[redacted]-I- 1Q06**	**[redacted]I- 2Q06**	**[redacted]- 3Q06**
EPA Lab ID															
Sample Depth (ft bgs)															
Sample Collection Date	**8/9/2002**	**1/23/2003**	**7/24/2003**	**9/25/2003**	**12/10/2003**	**2/5/2004**	**4/7/2004**	**7/15/2004**	**10/21/2004**	**2/23/2005**	**9/1/2005**	**11/2/2005**	**1/26/2006**	**4/19/2006**	**8/9/2006**
VOCs (μg/L)															
Bromomethane															
Carbon disulfide										10 U			0.5 U	0.5 U	0.5 U
Carbon tetrachloride	**18**	**28**	**4.1**	**3.9**	**2.2**	**2.4**	**2.6**	**2.9**	**1.8**	**2.4**	**15**	**12**	**3**	**21**	**5.3**
Chlorobenzene															
Chloroethane															
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U			0.5 U	**0.31 J**	**0.27 J**
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U			0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene															0.5 U
cis-1,3-Dichloropropene															
Cyclohexane															
Dibromochloromethane															
Dibromomethane															
Dichlorodifluoromethane															0.5 U
Diisopropyl Ether															
Ethylbenzene															
Hexachlorobutadiene															
Hexane															
Isopropylbenzene															
m,p-Xylene															
Methyl Acetate															
methyl tert-butyl ether															
Methylcyclohexane															
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U			0.5 U	0.5 U	0.5 U
Naphthalene															
n-butyl benzene															
n-propyl benzene															
o-Xylene															
p-Isopropyltoluene															
sec-butyl benzene															
Styrene															
tert-Butylbenzene															
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					0.5 U
Tetrahydrofuran															
Toluene															0.5 U
trans-1,2-Dichloroethene															
trans-1,3-Dichloropropene															
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					0.5 U
Trichlorofluoromethane															0.5 U
Vinyl chloride															

Sample Location	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1940 S. Wabash	1940 S. Wabash
Sample ID	[redacted]N- 3Q06	[redacted] 4Q06	E[redacted] I1Q07	[redacted]- I2Q07	[redacted]I- 3Q07	[redacted] 4Q07	1900SWABASH	[redacted] ON-4Q01	[redacted] ON-4Q01-R1	[redacted]S ON-I-3Q02	[redacted]NS ON-I-4Q02	D[redacted]S ON-I-1Q03	D[redacted] ON-I-2Q03	[redacted] 4Q01	S[redacted]- 4Q01
EPA Lab ID															
Sample Depth (ft bgs)															
Sample Collection Date	8/9/2006	12/20/2006	2/8/2007	5/11/2007	10/16/2007	1/11/2008	8/13/2008	10/23/2001	11/14/2001	8/10/2002	9/18/2002	2/19/2003	7/24/2003	10/23/2001	10/23/2001
VOCs (μg/L)															
1,1,1,2-Tetrachloroethane															
1,1,1-Trichloroethane	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U								
1,1,2,2-Tetrachloroethane															
1,1,2-Trichloroethane															
1,1,2-Trichlorotrifluoroethane															
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U								
1,1-Dichloroethene															
1,1-Dichloropropene															
1,2,3-Trichlorobenzene															
1,2,3-Trichloropropane															
1,2,4-Trichlorobenzene															
1,2,4-Trimethylbenzene															
1,2-Dibromo-3-chloropropane															
1,2-Dibromoethane															
1,2-Dichlorobenzene															
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane															
1,3,5-Trimethylbenzene															
1,3-Dichlorobenzene															
1,3-Dichloropropane															
1,4-Dichlorobenzene															
1,4-Dioxane															
2-Butanone															
2-Chlorotoluene															
2-Hexanone															
4-Chlorotoluene															
4-Methyl-2-pentanone															
Acetone															
Benzene															
Bromobenzene															
Bromochloromethane															
Bromodichloromethane															
Bromoform															

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1900 S WABASH	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1910 S. Wabash	1940 S. Wabash	1940 S. Wabash
Sample ID	[redacted]N- 3Q06	[redacted]I- 4Q06	[redacted] I1Q07	[redacted] I2Q07	[redacted] 3Q07	[redacted]-I- 4Q07	1900SWABASH	[redacted] ON-4Q01	[redacted]NS ON-4Q01-R1	[redacted] ON-I-3Q02	[redacted]S ON-I-4Q02	[redacted]NS ON-I-1Q03	D[redacted]HNS ON-I-2Q03	S[redacted]- 4Q01	[redacted] 4Q01
EPA Lab ID															
Sample Depth (ft bgs)															
Sample Collection Date	8/9/2006	12/20/2006	2/8/2007	5/11/2007	10/16/2007	1/11/2008	8/13/2008	10/23/2001	11/14/2001	8/10/2002	9/18/2002	2/19/2003	7/24/2003	10/23/2001	10/23/2001
VOCs (µg/L)															
Bromomethane															
Carbon disulfide	0.5 U	**0.12 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U					5 U	5 U
Carbon tetrachloride		**2.8**	**2.7**	**34 E**	**39 D**	**14 D**	**6.9**	**82**	**100**	**100**	**150**	**29**	**110**	**150**	**130**
Chlorobenzene															
Chloroethane															
Chloroform	0.5 U	**0.27 J**	**0.26 J**	**0.38 J**	**0.41 J**	**0.47 J**	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	5 U	1 U	1 U	1 U	1 U	5 U	5 U
cis-1,2-Dichloroethene	0.5 U	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U								
cis-1,3-Dichloropropene															
Cyclohexane															
Dibromochloromethane															
Dibromomethane															
Dichlorodifluoromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U								
Diisopropyl Ether															
Ethylbenzene															
Hexachlorobutadiene															
Hexane															
Isopropylbenzene															
m,p-Xylene															
Methyl Acetate															
methyl tert-butyl ether															
Methylcyclohexane															
Methylene chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 JB	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene															
n-butyl benzene															
n-propyl benzene															
o-Xylene															
p-Isopropyltoluene															
sec-butyl benzene															
Styrene															
tert-Butylbenzene															
Tetrachloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran															
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U								
trans-1,2-Dichloroethene															
trans-1,3-Dichloropropene															
Trichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U								
Vinyl chloride															

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	1940 S. Wabash	1940 S. Wabash	1940 S. Wabash	1940 S. Wabash	1940 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash	1960 S. Wabash
Sample ID	[redacted]- 3Q02	SC[redacted] 1Q03	S[redacted]E-I- 2Q03	S[redacted] 4Q03	1940SWABASH	[redacted]N- 4Q01	[redacted]N- 4Q01-R1	[redacted]N-I- 3Q02	[redacted]-I- 1Q03	[redacted]ON-I- 1Q03-R1	[redacted]-I- 2Q03	[redacted]N-I- 3Q03	[redacted] 4Q03	C[redacted] 1Q04	[redacted] 2Q04	[redacted]-I- 3Q04
EPA Lab ID																
Sample Depth (ft bgs)																
Sample Collection Date	8/10/2002	1/23/2003	7/15/2003	12/10/2003	8/13/2008	10/23/2001	11/15/2001	8/9/2002	2/19/2003	4/22/2003	7/23/2003	9/25/2003	12/9/2003	2/5/2004	4/7/2004	7/15/2004
VOCs (µg/L)																
1,1,1,2-Tetrachloroethane																
1,1,1-Trichloroethane					0.5 U											
1,1,2,2-Tetrachloroethane																
1,1,2-Trichloroethane																
1,1,2-Trichlorotrifluoroethane																
1,1-Dichloroethane					0.5 U											
1,1-Dichloroethene																
1,1-Dichloropropene																
1,2,3-Trichlorobenzene																
1,2,3-Trichloropropane																
1,2,4-Trichlorobenzene																
1,2,4-Trimethylbenzene																
1,2-Dibromo-3-chloropropane																
1,2-Dibromoethane																
1,2-Dichlorobenzene																
1,2-Dichloroethane	1 U	1 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane																
1,3,5-Trimethylbenzene																
1,3-Dichlorobenzene																
1,3-Dichloropropane																
1,4-Dichlorobenzene																
1,4-Dioxane																
2-Butanone																
2-Chlorotoluene																
2-Hexanone																
4-Chlorotoluene																
4-Methyl-2-pentanone																
Acetone																
Benzene																
Bromobenzene																
Bromochloromethane																
Bromodichloromethane																
Bromoform																

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	**1940 S. Wabash**	**1940 S. Wabash**	**1940 S. Wabash**	**1940 S. Wabash**	**1940 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**	**1960 S. Wabash**
Sample ID	**[redacted]-I- 3Q02**	**[redacted]E-I- 1Q03**	**[redacted]E-I- 2Q03**	**[redacted]-I- 4Q03**	**1940SWABASH**	**[redacted]- 4Q01**	**[redacted]- 4Q01-R1**	**[redacted]-I- 3Q02**	**[redacted]- 1Q03**	**[redacted]-I- 1Q03-R1**	**[redacted]- 2Q03**	**[redacted] 3Q03**	**[redacted] 4Q03**	**[redacted] 1Q04**	**[redacted] 2Q04**	**[redacted] 3Q04**
EPA Lab ID																
Sample Depth (ft bgs)																
Sample Collection Date	**8/10/2002**	**1/23/2003**	**7/15/2003**	**12/10/2003**	**8/13/2008**	**10/23/2001**	**11/15/2001**	**8/9/2002**	**2/19/2003**	**4/22/2003**	**7/23/2003**	**9/25/2003**	**12/9/2003**	**2/5/2004**	**4/7/2004**	**7/15/2004**
VOCs (μg/L)																
Bromomethane																
Carbon disulfide					0.5 U	5 U	5 U									
Carbon tetrachloride	**40**	**150**	**170**	**130**	**120**	**120**	**130**	**110**	**140**	**330 D**	**200 D**	**300 D**	**250 D**	**260 D**	**350 D**	**310 D**
Chlorobenzene																
Chloroethane																
Chloroform	**4.8**	1 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	**1.2**	1 U	**1.1**	**1.2**	1 U	**1.5**	**1.1**
Chloromethane	1 U	1 U	1 U	1 U	0.5 U	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene					0.5 U											
cis-1,3-Dichloropropene																
Cyclohexane																
Dibromochloromethane																
Dibromomethane																
Dichlorodifluoromethane					0.5 U											
Diisopropyl Ether																
Ethylbenzene																
Hexachlorobutadiene																
Hexane																
Isopropylbenzene																
m,p-Xylene																
Methyl Acetate																
methyl tert-butyl ether																
Methylcyclohexane																
Methylene chloride	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene																
n-butyl benzene																
n-propyl benzene																
o-Xylene																
p-Isopropyltoluene																
sec-butyl benzene																
Styrene																
tert-Butylbenzene																
Tetrachloroethene	1 U	1 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran																
Toluene					0.5 U											
trans-1,2-Dichloroethene																
trans-1,3-Dichloropropene																
Trichloroethene	1 U	1 U	1 U	1 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane					0.5 U											
Vinyl chloride																

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash
Sample ID	[redacted]- 2Q02	[redacted]-I- 4Q02	[redacted]-I- 1Q03	S[redacted]- 2Q03	[redacted]-I- 3Q03	S[redacted]-I- 4Q03	[redacted] 1Q04	[redacted] 2Q04	[redacted] 3Q04	[redacted] 4Q04	S[redacted] 1Q05	[redacted]- 2Q05	[redacted] 3Q05	S[redacted] 4Q05	[redacted] 1Q06	[redacted]- 1Q06D
EPA Lab ID																
Sample Depth (ft bgs)																
Sample Collection Date	7/16/2002	9/17/2002	1/23/2003	7/17/2003	9/25/2003	12/10/2003	2/5/2004	4/8/2004	7/15/2004	10/21/2004	2/23/2005	6/2/2005	9/1/2005	11/3/2005	1/26/2006	1/26/2006
VOCs (μg/L)																
1,1,1,2-Tetrachloroethane																
1,1,1-Trichloroethane																
1,1,2,2-Tetrachloroethane																
1,1,2-Trichloroethane																
1,1,2-Trichlorotrifluoroethane																
1,1-Dichloroethane																
1,1-Dichloroethene																
1,1-Dichloropropene																
1,2,3-Trichlorobenzene																
1,2,3-Trichloropropane																
1,2,4-Trichlorobenzene																
1,2,4-Trimethylbenzene																
1,2-Dibromo-3-chloropropane																
1,2-Dibromoethane																
1,2-Dichlorobenzene																
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
1,2-Dichloropropane																
1,3,5-Trimethylbenzene																
1,3-Dichlorobenzene																
1,3-Dichloropropane																
1,4-Dichlorobenzene																
1,4-Dioxane																
2-Butanone																
2-Chlorotoluene																
2-Hexanone																
4-Chlorotoluene																
4-Methyl-2-pentanone																
Acetone																
Benzene																
Bromobenzene																
Bromochloromethane																
Bromodichloromethane																
Bromoform																

Table 2.5
Analytical Results--Off-Property Groundwater
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash	2000 S. Wabash
Sample ID	[redacted] 2Q02	[redacted]-I- 4Q02	S[redacted] 1Q03	S[redacted]-I- 2Q03	S[redacted]-I- 3Q03	[redacted]- 4Q03	[redacted] 1Q04	[redacted] 2Q04	[redacted]-I- 3Q04	S[redacted]-I- 4Q04	S[redacted]-I- 1Q05	[redacted]A-I- 2Q05	S[redacted]A-I- 3Q05	[redacted]-I- 4Q05	S[redacted]-I- 1Q06	[redacted]A-I- 1Q06D
EPA Lab ID																
Sample Depth (ft bgs)																
Sample Collection Date	7/16/2002	9/17/2002	1/23/2003	7/17/2003	9/25/2003	12/10/2003	2/5/2004	4/8/2004	7/15/2004	10/21/2004	2/23/2005	6/2/2005	9/1/2005	11/3/2005	1/26/2006	1/26/2006
VOCs ($\mu g/L$)																
Bromomethane																
Carbon disulfide											10 U				0.5 U	0.5 U
Carbon tetrachloride	**110 D**	**120**	**200**	**130**	**200 D**	**190 D**	**210 D**	**210 D**	**180**	**210 D**	**260 D**	**220 D**	**160**	**200 D**	**250 D**	**240 D**
Chlorobenzene																
Chloroethane																
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	**1.1**			**1.3**	**1.3**
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				0.5 U	0.5 U
cis-1,2-Dichloroethene																
cis-1,3-Dichloropropene																
Cyclohexane																
Dibromochloromethane																
Dibromomethane																
Dichlorodifluoromethane																
Diisopropyl Ether																
Ethylbenzene																
Hexachlorobutadiene																
Hexane																
Isopropylbenzene																
m,p-Xylene																
Methyl Acetate																
methyl tert-butyl ether																
Methylcyclohexane																
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U				0.5 U	0.5 U
Naphthalene																
n-butyl benzene																
n-propyl benzene																
o-Xylene																
p-Isopropyltoluene																
sec-butyl benzene																
Styrene																
tert-Butylbenzene																
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
Tetrahydrofuran																
Toluene																
trans-1,2-Dichloroethene																
trans-1,3-Dichloropropene																
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
Trichlorofluoromethane																
Vinyl chloride																

Table 2.6
Analytical Results - Subslab Soil Gas
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	**SG-4**	**SG-5**	**SG-6**	**SG-7**	**SG-9**	**SG-10**
EPA Lab ID	**4521-9**	**4521-3**	**4521-4**	**4521-5**	**4521-6**	**4521-7**
Sample Collection Date	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**
VOCs (μg/m3)						
1,1,1-Trichloroethane	**74.6**	**3.7**	2.7 U	2.7 U	2.7 U	2.7 U
1,1,2,2-Tetrachloroethane	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
1,1,2-Trichloroethane	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Trichlorotrifluoroethane	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U
1,2,4-Trichlorobenzene	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
1,2,4-Trimethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dichlorobenzene	3 U	3 U	3 U	3 U	3 U	3 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
1,3,5-Trimethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,3-Dichlorobenzene	3 U	3 U	3 U	3 U	3 U	3 U
2-Butanone	**2.4**	**4.3**	**2.4**	**15.5**	**8.5**	**2.8**
2-Hexanone	2.1 U	2.1 U	2.1 U	**3.2**	2.1 U	2.1 U
4-Methyl-2-pentanone	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Acetone	**8.9**	**31.2**	**7.5**	**133**	**45.9**	**18.7**
Benzene	1.6 U	1.6 U	1.6 U	1.6 U	**2.2**	1.6 U
Bromodichloromethane	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Bromoform	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Bromomethane	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Carbon disulfide	1.6 U	1.6 U	1.6 U	**3.2**	1.6 U	1.6 U
Carbon tetrachloride	3.1 U	3.1 U	3.1 U	3.1 U	**3.7**	3.1 U
Chlorobenzene	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Chloroethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Chloroform	2.4 U	2.4 U	2.4 U	**6.3**	**93.3**	**46.7**
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,3-Dichloropropene	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Dibromochloromethane	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
Ethylbenzene	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Heptane	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Hexachlorobutadiene	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U
Hexane	1.8 U	1.8 U	1.8 U	1.8 U	**2.3**	1.8 U
Isopropylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
m,p-Xylene	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Methylene chloride	**3.6**	**2.5**	**3**	**3.1**	**3.6**	**3.9**

Table 2.6
Analytical Results - Subslab Soil Gas
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SG-4	SG-5	SG-6	SG-7	SG-9	SG-10
EPA Lab ID	**4521-9**	**4521-3**	**4521-4**	**4521-5**	**4521-6**	**4521-7**
Sample Collection Date	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**	**8/24/2009**
Naphthalene	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
o-Xylene	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
Styrene	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Tetrachloroethene	**36.6**	**420**	**22.8**	**1350**	**123**	**185**
Toluene	1.9 U	1.9 U	1.9 U	1.9 U	**1.9**	1.9 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Trichloroethene	2.7 U	2.7 U	2.7 U	**39.9**	2.7 U	2.7 U
Vinyl chloride	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U

Notes:

FD - Field Duplicate

ID - identification

J - The identification of the analyte is acceptable; the reported value is an estimate.

μg/kg - micrograms per kilogram

N/A - Not Applicable

NE - Not Established

PCB - Polychlorinated Biphenyl

U - The analyte was not detected at or above the reporting limit.

UJ - The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

SVOC - Semivolatile Organic Compound

VOC - Volatile Organic Compound

Table 2.7
Surface Soil Screening for Current Non-Construction Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current Scenarios
Medium: Soil
Exposure Medium: Soil
Exposure Point: Surface Soil

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection [2] Limits	Concentration [2] Used for Screening	Residential [3] Soil RSL (mg/kg)		COPC Flag	Rationale for [4] Selection or Deletion
	VOCs													
67-64-1	Acetone	2.9E-02		1.4E-01		mg/kg	SB-31 (0-1)	8/8	0.011 - 0.015	1.4E-01	6.1E+03	n	NO	BSL
79-20-9	Methyl Acetate	7.3E-03		7.3E-03		mg/kg	SB-31 (0-1)	1/8	0.0048 - 0.0071	7.3E-03	7.8E+03	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	1.4E-02		2.7E-02		mg/kg	SB-12 (0-1)	5/8	0.010 - 0.014	2.7E-02	2.8E+03	n	NO	BSL
	Pesticides													
1024-57-3	Heptachlor Epoxide	3.1E-03	J	3.1E-03	J	mg/kg	SB-21 (0-0.5)	1/8	0.0018 - 0.0021	3.1E-03	5.3E-02	c	NO	BSL
	PCBs													
12672-29-6	Aroclor 1248	2.0E-01		2.0E-01		mg/kg	SB-18 (0-0.5)	1/8	0.036 - 0.040	2.0E-01	2.2E-01	c	NO	BSL

Surface Soil data are samples that included the 0 to 0.5 ft interval.
(1) Minimum/Maximum detected concentrations.
(2) Maximum detected concentration is used for screening.
(3) Screening value based on residential soil RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.
(4) Rationale Codes: Above Screening Levels (ASL), Essential Nutrient (NUT), Below Screening Level (BSL)

C = Carcinogenic
COPC = Chemical of Potential Concern
mg/kg = milligrams per kilogram
N = Noncarcinogenic
NA = Not Available

Table 2.8
Subsurface Soil Screening for Future Non-Construction Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future Non-Construction Scenarios
Medium: Soil
Exposure Medium: Soil
Exposure Point: Subsurface Soil

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection [2] Limits	Concentration Used for Screening [2]	Residential [3] Soil RSL (mg/kg)	COPC Flag	Rationale for [4] Selection or Deletion
	VOCs												
67-64-1	Acetone	2.9E-02		1.4E-01		mg/kg	SB-31 (0-1)	12/12	0.011 - 0.015	1.4E-01	6.1E+03 n	NO	BSL
56-23-5	Carbon Tetrachloride	1.4E-02		7.7E-02		mg/kg	SB-03 (4-5)	2/12	0.0048 - 0.0071	7.7E-02	6.1E-01 c	NO	BSL
67-66-3	Chloroform	7.5E-03		1.3E-02		mg/kg	SB-01 (0.5-1)	2/12	0.0048 - 0.0013	1.3E-02	2.9E-01 c	NO	BSL
79-20-9	Methyl Acetate	7.3E-03		7.3E-03		mg/kg	SB-31 (0-1)	1/12	0.0048 - 0.0013	7.3E-03	7.8E+03 n	NO	BSL
78-93-3	Methyl Ethyl Ketone	1.0E-02		2.7E-02		mg/kg	SB-12 (0-1)	8/12	0.010 - 0.026	2.7E-02	2.8E+03 n	NO	BSL
	Pesticides												
1024-57-3	Heptachlor Epoxide	3.1E-03	J	3.1E-03	J	mg/kg	SB-21 (0-0.5)	1/8	0.0018 - 0.0021	3.1E-03	5.3E-02 c	NO	BSL
	PCBs												
12672-29-6	Aroclor 1248	2.0E-01		2.0E-01		mg/kg	SB-18 (0-0.5)	1/8	0.036 - 0.040	2.0E-01	2.2E-01 c	NO	BSL

Data are samples from the 0.5 to 10 ft interval of the more contaminated subsurface soil on the Garvey Property.
(1) Minimum/Maximum detected concentrations.
(2) Maximum detected concentration is used for screening.
(3) Screening value based on residential soil RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.
(4) Rationale Codes: Above Screening Levels (ASL), Essential Nutrient (NUT), Below Screening Level (BSL)

C = Carcinogenic
COPC = Chemical of Potential Concern
mg/kg = milligrams per kilogram
N = Noncarcinogenic
NA = not available

Table 2.9
Sediment Screening for Current and Future Non-Construction Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future Non-Construction
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection Limits	Concentration Used for Screening [2]	Residential Soil RSL (mg/kg) [3]		COPC Flag	Rationale for Selection or Deletion [4]
	VOCs													
67-64-1	Acetone	1.0E-01	J	5.2E-01	J	mg/kg	SD-01	9/10	0.012	5.2E-01	6.1E+03	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	1.2E-02		3.3E-02		mg/kg	SD-11	9/10	0.012	3.3E-02	2.8E+03	n	NO	BSL
108-88-3	Toluene	3.7E-02		3.7E-02		mg/kg	SD-08	1/10	0.0059 - 0.0091	3.7E-02	5.0E+02	n	NO	BSL
	SVOCs													
50-32-8	Benzo(a)pyrene	2.3E-01		2.3E-01		mg/kg	SD-10	1/10	0.087 - 0.38	2.3E-01	1.5E-02	c	YES	**ASL**
205-99-2	Benzo(b)fluoranthene	2.3E-01		2.3E-01		mg/kg	SD-10	1/10	0.087 - 0.38	2.3E-01	1.5E-01	c	YES	**ASL**
65-85-0	Benzoic Acid	5.9E-01	J	5.9E-01	J	mg/kg	SD-01	1/10	0.44 - 1.9	5.9E-01	2.4E+04	n	NO	BSL
218-01-9	Chrysene	2.3E-01		2.3E-01		mg/kg	SD-10	1/10	0.087 - 0.38	2.3E-01	1.5E+01	c	NO	BSL
	Pesticides													
12789-03-6	Chlordane	1.2E-02	J	1.2E-02	J	mg/kg	SD-10	1/10	0.0044 - 0.024	1.2E-02	1.6E+00	c	NO	BSL
60-57-1	Dieldrin	8.4E-04		1.3E-02		mg/kg	SD-10	2/10	0.00064 - 0.00073	1.3E-02	3.0E-02	c	NO	BSL
72-55-9	DDE	2.1E-03	J	2.1E-03	J	mg/kg	SD-10	1/10	0.0011 - 0.0012	2.1E-03	1.4E+00	c	NO	BSL
50-29-3	DDT	2.1E-03	J	2.1E-03	J	mg/kg	SD-10	1/10	0.0011 - 0.0057	2.1E-03	1.7E+00	c	NO	BSL

(1) Minimum/Maximum detected concentrations.

(2) Maximum detected concentration is used for screening.

(3) Screening value based on residential soil RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.

(4) Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

C = Carcinogenic

COPC = Chemical of Potential Concern

mg/kg = milligrams per kilogram

N = Noncarcinogenic

J = estimated

Table 2.10
Calculation of Chemical Specific VF Factors for Excavation Activities
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Chemical	Diffusivity in Air (D_i) (cm^2/s)	Henry's Law Constant (H') (unitless)	Diffusivity in Water (D_w) (cm^2/s)	Soil Organic Carbon Partition Coeff. (K_{oc}) (cm^3/g)	Soil Water Partition Coeff. ($K_d = K_{oc} \times F_{oc}$) ($g/cm^3$)	Apparent Diffusivity (D_A) (cm^2/s)	Volatilization Factor (VF) (m^3/kg)
Acetone	1.10E-01	1.40E-03	1.10E-05	2.36E+00	1.4E-02	7.2E-05	3.02E+03
Carbon Tetrachloride	5.70E-02	1.10E+00	9.80E-06	4.39E+01	2.6E-01	5.8E-03	3.35E+02
Chloroform	7.70E-02	1.50E-01	1.10E-05	3.18E+01	1.9E-01	1.9E-03	5.84E+02
Methyl Acetate	9.60E-02	4.70E-03	1.10E-05	3.06E+00	1.8E-02	2.0E-04	1.80E+03
Methyl ethyl ketone	9.10E-02	2.30E-03	1.00E-05	4.51E+00	2.7E-02	8.8E-05	2.73E+03
Heptachlor epoxide		8.60E-04		1.01E+04	6.1E+01	0.0E+00	
Aroclor 1248		1.80E-02		7.65E+04	4.6E+02	0.0E+00	

Chemical Specific parameters from the Regional Screening Tables Parameters Table (May 2009)

Volatilization factor (VF) = (m^3/kg)

$$VF = \frac{Q/C * (3.14 * D_A * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * r_b * D_A * F_D}$$

Apparent Diffusivity (D_A) = (cm^2/s)

$$D_A = \frac{[(Q_a^{10/3} * D_i * H' + Q_w^{10/3} * D_w)/n^2]}{(r_b * K_d + Q_w + Q_a * H')}$$

Parameters	Values
Q/Csa; default value for 0.5 acre source area	14.31
F_D - dispersion correction factor (unitless)	0.185
T - Exposure interval(s); represents 1-yr interval	3.15E+07
r_b - Soil bulk density (g/cm^3)	1.5
Q_a - Air-filled soil porosity (L_{air}/L_{water}) = n - Q_w	0.28
n - Total soil porosity (Lpore/Lsoil) = 1 - (r_b/r_s)	0.43
Q_w - Water-filled soil porosity (Lwater/Lsoil)	0.15
r_s - Soil particle density (g/cm^3)	2.65
f_{oc} - fraction organic carbon in soil (g/g)	0.006

Default values obtained from Eqn. 5-14, EPA Supplemental Guidance, 2002.

Table 2.11
Total Surface/Subsurface Soil to Air Pathway for Fugitive Dust from Excavation Activities for Future Construction Worker Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future Construction
Medium: Soil
Exposure Medium: Air
Exposure Point: Ambient Air

CAS Number	Chemical	Minimum Calculated Fugitive Dust Concentration [1]	Minimum Qualifier	Maximum Calculated Fugitive Dust Concentration [1]	Maximum Qualifier	Units	PEF (m3/kg)	VF (m3/kg)	Concentration Used for Screening (ug/m3) [2]	Industrial Air RSL (ug/m3) [3]		COPC Flag	Rationale for Selection or Deletion [4]
	VOCs												
67-64-1	Acetone	9.6E-03		4.6E-02		ug/m3	7.74E+05	3.02E+03	4.6E-02	1.4E+04	n	NO	BSL
56-23-5	Carbon Tetrachloride	4.2E-02		2.3E-01		ug/m3	7.74E+05	3.35E+02	2.3E-01	2.0E+00	c	NO	BSL
67-66-3	Chloroform	1.3E-02		2.2E-02		ug/m3	7.74E+05	5.84E+02	2.2E-02	5.3E-01	c	NO	BSL
79-20-9	Methyl Acetate	4.0E-03		4.0E-03		ug/m3	7.74E+05	1.80E+03	4.0E-03	NA		NO	NSL
78-93-3	Methyl Ethyl Ketone	3.7E-03		9.9E-03		ug/m3	7.74E+05	2.73E+03	9.9E-03	2.2E+03	n	NO	BSL
	Pesticides												
1024-57-3	Heptachlor Epoxide	4.0E-06	J	4.0E-06	J	ug/m3	7.74E+05	--	4.0E-06	4.7E-03	c	NO	BSL
	PCBs												
12672-29-6	Aroclor 1248	2.6E-04		2.6E-04		ug/m3	7.74E+05	--	2.6E-04	2.1E-02	c	NO	BSL

This table presents calculated excavation-related fugitive dust calculations based on the total soil sample results.

[1] Air conc. = soil concentration x 1000 (unit correction) x (1/PEF) for non-volatiles; or = soil concentration x 1000 (unit correction) x (1/VF) for volatiles.

PEF = particulate emission factor (7.74E+05) in accordance with Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, EPA 2002.

VF = volitilization factor (See Table 2.10 for more details)

Appendix E for Unpaved Road Traffic.

[2] Maximum estimated concentration is used for screening.

[3] Screening value based on Industrial air RSLs, USEPA Regional Screening Levels Table, May 2009. ILCR = 10-6 or HQ = 0.1.

[4] Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

C = Carcinogenic
COPC = Chemical of Potential Concerr
ug/m3 = micrograms per cubic meter
mg/m3 = milligrams per cubic meter
NA = not available
N = Noncarcinogenic

Table 2.12
Future Surface/Subsurface Total Soil Screening for Future Construction Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future Construction Scenarios
Medium: Soil
Exposure Medium: Soil
Exposure Point: Surface and Subsurface Soil

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection Limits [2]	Concentration Used for Screening [2]	Industrial Soil RSL (mg/kg) [3]		COPC Flag	Rationale for Selection or Deletion [4]
	VOCs													
67-64-1	Acetone	2.9E-02		1.4E-01		mg/kg	SB-31 (0-1)	12/12	0.011 - 0.015	1.4E-01	6.3E+04	n	NO	BSL
56-23-5	Carbon Tetrachloride	1.4E-02		7.7E-02		mg/kg	SB-03 (4-5)	2/12	0.0048 - 0.0071	7.7E-02	3.0E+00	c	NO	BSL
67-66-3	Chloroform	7.5E-03		1.3E-02		mg/kg	SB-01 (0.5-1)	2/12	0.0048 - 0.0013	1.3E-02	1.5E+00	c	NO	BSL
79-20-9	Methyl Acetate	7.3E-03		7.3E-03		mg/kg	SB-31 (0-1)	1/12	0.0048 - 0.0013	7.3E-03	1.0E+05	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	1.0E-02		2.7E-02		mg/kg	SB-12 (0-1)	8/12	0.010 - 0.026	2.7E-02	2.0E+04	n	NO	BSL
	Pesticides													
1024-57-3	Heptachlor Epoxide	3.1E-03	J	3.1E-03	J	mg/kg	SB-21 (0-0.5)	1/8	0.0018 - 0.0021	3.1E-03	1.9E-01	c	NO	BSL
	PCBs													
12672-29-6	Aroclor 1248	2.0E-01		2.0E-01		mg/kg	SB-18 (0-0.5)	1/8	0.036 - 0.040	2.0E-01	7.4E-01	c	NO	BSL

Total Soil data are samples that included the 0 to 10 ft interval.
(1) Minimum/Maximum detected concentrations.
(2) Maximum detected concentration is used for screening.
(3) Screening value based on industrial soil RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.
(4) Rationale Codes: Above Screening Levels (ASL), Essential Nutrient (NUT), Below Screening Level (BSL)

C = Carcinogenic
COPC = Chemical of Potential Concern
mg/kg = milligrams per kilogram
N = Noncarcinogenic
NA = not available

Table 2.13
Sediment Screening for Future Construction Worker Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future Construction Worker
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection Limits	Concentration Used for Screening [2]	Industrial Soil RSL (mg/kg) [3]		COPC Flag	Rationale for Selection or Deletion [4]
	VOCs													
67-64-1	Acetone	1.0E-01	J	5.2E-01	J	mg/kg	SD-01	9/10	0.012	5.2E-01	6.3E+04	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	1.2E-02		3.3E-02		mg/kg	SD-11	9/10	0.012	3.3E-02	2.0E+04	n	NO	BSL
108-88-3	Toluene	3.7E-02		3.7E-02		mg/kg	SD-08	1/10	0.0059 - 0.0091	3.7E-02	4.5E+03	n	NO	BSL
	SVOCs													
50-32-8	Benzo(a)pyrene	2.3E-01		2.3E-01		mg/kg	SD-10	1/10	0.087 - 0.38	2.3E-01	2.1E-01	c	YES	**ASL**
205-99-2	Benzo(b)fluoranthene	2.3E-01		2.3E-01		mg/kg	SD-10	1/10	0.087 - 0.38	2.3E-01	2.1E+00	c	NO	BSL
65-85-0	Benzoic Acid	5.9E-01	J	5.9E-01	J	mg/kg	SD-01	1/10	0.44 - 1.9	5.9E-01	2.5E+05	n	NO	BSL
218-01-9	Chrysene	2.3E-01		2.3E-01		mg/kg	SD-10	1/10	0.087 - 0.38	2.3E-01	2.1E+02	c	NO	BSL
	Pesticides													
12789-03-6	Chlordane	1.2E-02	J	1.2E-02	J	mg/kg	SD-10	1/10	0.0044 - 0.024	1.2E-02	6.5E+00	c	NO	BSL
60-57-1	Dieldrin	8.4E-04		1.3E-02		mg/kg	SD-10	2/10	0.00064 - 0.00073	1.3E-02	1.1E-01	c	NO	BSL
72-55-9	DDE	2.1E-03	J	2.1E-03	J	mg/kg	SD-10	1/10	0.0011 - 0.0012	2.1E-03	5.1E+00	c	NO	BSL
50-29-3	DDT	2.1E-03	J	2.1E-03	J	mg/kg	SD-10	1/10	0.0011 - 0.0057	2.1E-03	7.0E+00	c	NO	BSL

(1) Minimum/Maximum detected concentrations.
(2) Maximum detected concentration is used for screening.
(3) Screening value based on indistrial soil RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.
(4) Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

C = Carcinogenic
COPC = Chemical of Potential Concern
mg/kg = milligrams per kilogram
N = Noncarcinogenic
J = estimated

Table 2.14
On-Property Groundwater Screening
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future Residential
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Groundwater

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection Limits [2]	Concentration Used for Screening [2]	Tapwater RSL (ug/L) [3]		COPC Flag	Rationale for Selection or Deletion [4]
	VOCs													
67-64-1	Acetone	9.6E+00		5.5E+01		ug/L	SB-29 (124-128)	6/25	5.0 - 50	5.5E+01	2.2E+03	n	NO	BSL
71-43-2	Benzene	8.6E-01		4.0E+00		ug/L	SB-37 (125-129)	4/25	0.5 - 5.0	4.0E+00	4.1E-01	c	YES	**ASL**
75-15-0	Carbon Disulfide	7.9E-01		8.2E-01		ug/L	SB-37 (125-129)	2/25	0.5 - 5.0	8.2E-01	1.0E+02	n	NO	BSL
56-23-5	Carbon Tetrachloride	1.8E+00		1.3E+03		ug/L	MW-4B (127-132)	25/25	0.5 - 5.0	1.3E+03	4.4E-01	c	YES	**ASL**
108-90-7	Chlorobenzene	8.3E-01		2.5E+00		ug/L	SB-40 FD (125-129)	4/25	0.5 - 5.0	2.5E+00	9.1E+00	n	NO	BSL
67-66-3	Chloroform	1.2E+00		1.8E+01		ug/L	SB-29 (124-128)	16/25	0.5 - 5.0	1.8E+01	1.9E-01	c	YES	**ASL**
79-20-9	Methyl Acetate	2.4E+00		2.4E+00		ug/L	MW-31A (127-132)	1/25	0.5 - 5.0	2.4E+00	3.7E+03	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	7.5E+00		9.0E+00		ug/L	SB-29 (124-128)	2/25	5.0 - 50	9.0E+00	7.1E+02	n	NO	BSL
1330-20-7	m,p-Xylenes	1.1E+00		1.1E+00		ug/L	SB-35 (124-128)	1/25	0.5 - 5.0	1.1E+00	1.2E+02	n	NO	BSL
95-47-6	o-Xylenes	5.1E-01		5.1E-01		ug/L	SB-35 (124-128)	1/25	0.5 - 5.0	5.1E-01	1.2E+02	n	NO	BSL
108-88-3	Toluene	1.5E+00		1.9E+00		ug/L	SB-35 (124-128)	3/25	0.5 - 5.0	1.9E+00	2.3E+02	n	NO	BSL
79-01-6	Trichloroethene	3.7E+00		7.3E+00		ug/L	SB-38 (124-128)	3/25	0.5 - 5.0	7.3E+00	2.0E+00	c	YES	**ASL**

(1) Minimum/Maximum detected concentrations.
(2) Maximum detected concentration is used for screening.
(3) Screening value based on the tapwater RSLs, USEPA Regional Screening Levels Table, May 2009. ILCR = 10-6 or HQ = 0.1.
(4) Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

ug/L = micrograms per liter
C = Carcinogenic
COPC = Chemical of Potential Concern
NA = not available
N = Noncarcinogenic
J = estimated

Table 2.15
Off-Property Groundwater Screening
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current Residential
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection [2] Limits	Concentration Used for Screening [3]	Tapwater RSL (ug/L) [4]		COPC Flag	Rationale for Selection or Deletion [5]
	VOCs													
75-15-0	Carbon Disulfide	1.2E-01		1.2E-01		ug/L	1900 S. Wabash	1/46	0.5 - 10	1.2E-01	1.0E+02	n	NO	BSL
56-23-5	Carbon Tetrachloride	6.1E-01		9.6E+02		ug/L	1725 S. Wabash	114/114	0.5 - 1.0	9.6E+02	4.4E-01	c	YES	**ASL**
67-66-3	Chloroform	2.6E-01		1.4E+02		ug/L	TS1-01 FD (158-162)	42/107	0.5 - 1.0	1.4E+02	1.9E-01	c	YES	**ASL**
107-06-2	1,2-Dichloroethane	3.0E+00		3.0E+00		ug/L	1820 S. Wabash	1/102	0.5 - 1.0	3.0E+00	1.5E-01	c	YES	**ASL**
78-93-3	Methyl Ethyl Ketone	1.2E+01		1.2E+01		ug/L	TS1-02 (143-147)	1/23	5.0 - 10	1.2E+01	7.1E+02	n	NO	BSL
75-09-2	Methylene chloride	5.2E-01		9.3E-01		ug/L	TS1-02 (159-163)	6/106	0.5 - 5.0	9.3E-01	4.8E+00	c	NO	BSL
108-88-3	Toluene	5.1E-01		9.5E-01		ug/L	TS1-02 (181-185)	6/32	0.5 - 1.0	9.5E-01	2.3E+02	n	NO	BSL
71-55-6	1,1,1-Trichloroethane	4.5E+00		4.5E+00		ug/L	MW-105A	1/31	0.5 - 1.0	4.5E+00	9.1E+02	n	NO	BSL

(1) Minimum/Maximum detected concentrations.
(2) Maximum detected concentration is used for screening.
(3) Screening value based on the tapwater RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.
(4) Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

ug/L = micrograms per liter
C = Carcinogenic
COPC = Chemical of Potential Concern
NA = not available
N = Noncarcinogenic
J = estimated

Table 2.16
Sub-Slab Soil Gas Screening for Residental Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Indoor Residential
Medium: Soil
Exposure Medium:Soil Gas
Exposure Point: Ambient Air

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection [2] Limits	Concentration [2] Used for Screening	Residential Indoor Air RSL (ug/m3) [3]		COPC Flag	Rationale for [4] Selection or Deletion
	VOCs													
67-64-1	Acetone	7.5E-01		1.3E+01		ug/m3	SG-7	6/6	5.5	1.3E+01	3.2E+03	n	NO	BSL
71-43-2	Benzene	2.2E-01		2.2E-01		ug/m3	SG-9	1/6	1.6	2.2E-01	3.1E-01	c	NO	BSL
75-15-0	Carbon Disulfide	3.2E-01		3.2E-01		ug/m3	SG-7	1/6	1.6	3.2E-01	7.3E+01	n	NO	BSL
56-23-5	Carbon Tetrachloride	3.7E-01		3.7E-01		ug/m3	SG-9	1/6	3.1	3.7E-01	4.1E-01	c	NO	BSL
67-66-3	Chloroform	6.3E-01		9.3E+00		ug/m3	SG-9	3/6	2.4	9.3E+00	1.1E-01	c	YES	**ASL**
591-78-6	2-Hexanone	3.2E-01		3.2E-01		ug/m3	SG-7	1/6	2.1	3.2E-01	3.1E+00	n	NO	BSL
110-54-3	Hexane	2.3E-01		2.3E-01		ug/m3	SG-9	1/6	1.8	2.3E-01	7.3E+01	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	2.4E-01		1.6E+00		ug/m3	SG-7	6/6	5.5	1.6E+00	5.2E+02	n	NO	BSL
75-09-2	Methylene Chloride	2.5E-01		3.9E-01		ug/m3	SG-10	6/6	5.5	3.9E-01	5.2E+00	c	NO	BSL
127-18-4	Tetrachloroethene	2.3E+00		1.4E+02		ug/m3	SG-7	6/6	3.4	1.4E+02	4.1E-01	c	YES	**ASL**
108-88-3	Toluene	1.9E-01		1.9E-01		ug/m3	SG-9	1/6	1.9	1.9E-01	5.2E+02	n	NO	BSL
71-55-6	1,1,1-Trichloroethane	3.7E-01		7.5E+00		ug/m3	SG-4	2/6	2.7	7.5E+00	5.2E+02	n	NO	BSL
79-01-6	Trichloroethene	4.0E+00		4.0E+00		ug/m3	SG-7	1/6	2.7	4.0E+00	1.2E+00	c	YES	**ASL**

This evaluation includes subslab soil gas samples collected from under the building multiplied by an attenuation factor of 0.1 to estimate indoor air concentrations.

(1) Minimum/Maximum detected concentrations.

(2) Maximum detected concentration is used for screening.

(3) Screening value based on residential air RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.

(4) Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

COPC = Chemical of Potential Concern
NA = Not applicable or not available
ug/m3 = micrograms per cubic meter

Table 2.17
Sub-Slab Soil Gas Screening for Industrial Scenarios
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Indoor Industrial
Medium: Soil
Exposure Medium:Soil Gas
Exposure Point: Ambient Air

CAS Number	Chemical	Minimum Concentration [1]	Minimum Qualifier	Maximum Concentration [1]	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Detection [2] Limits	Concentration Used for Screening [2]	Industrial Indoor Air RSL (ug/m3) [3]		COPC Flag	Rationale for Selection or Deletion [4]
	VOCs													
67-64-1	Acetone	7.5E-01		1.3E+01		ug/m3	SG-7	6/6	5.5	1.3E+01	1.4E+04	n	NO	BSL
71-43-2	Benzene	2.2E-01		2.2E-01		ug/m3	SG-9	1/6	1.6	2.2E-01	1.6E+00	c	NO	BSL
75-15-0	Carbon Disulfide	3.2E-01		3.2E-01		ug/m3	SG-7	1/6	1.6	3.2E-01	3.1E+02	n	NO	BSL
56-23-5	Carbon Tetrachloride	3.7E-01		3.7E-01		ug/m3	SG-9	1/6	3.1	3.7E-01	2.0E+00	c	NO	BSL
67-66-3	Chloroform	6.3E-01		9.3E+00		ug/m3	SG-9	3/6	2.4	9.3E+00	5.3E-01	c	YES	**ASL**
591-78-6	2-Hexanone	3.2E-01		3.2E-01		ug/m3	SG-7	1/6	2.1	3.2E-01	1.3E+01	n	NO	BSL
110-54-3	Hexane	2.3E-01		2.3E-01		ug/m3	SG-9	1/6	1.8	2.3E-01	3.1E+02	n	NO	BSL
78-93-3	Methyl Ethyl Ketone	2.4E-01		1.6E+00		ug/m3	SG-7	6/6	5.5	1.6E+00	2.2E+03	n	NO	BSL
75-09-2	Methylene Chloride	2.5E-01		3.9E-01		ug/m3	SG-10	6/6	5.5	3.9E-01	2.6E+01	c	NO	BSL
127-18-4	Tetrachloroethene	2.3E+00		1.4E+02		ug/m3	SG-7	6/6	3.4	1.4E+02	2.1E+00	c	YES	**ASL**
108-88-3	Toluene	1.9E-01		1.9E-01		ug/m3	SG-9	1/6	1.9	1.9E-01	2.2E+03	n	NO	BSL
71-55-6	1,1,1-Trichloroethane	3.7E-01		7.5E+00		ug/m3	SG-4	2/6	2.7	7.5E+00	2.2E+03	n	NO	BSL
79-01-6	Trichloroethene	4.0E+00		4.0E+00		ug/m3	SG-7	1/6	2.7	4.0E+00	6.1E+00	c	NO	BSL

This evaluation includes subslab soil gas samples collected from under the building multiplied by an attenuation factor of 0.1 to estimate indoor air concentrations.

(1) Minimum/Maximum detected concentrations.

(2) Maximum detected concentration is used for screening.

(3) Screening value based on Industrial air RSLs, USEPA Regional Screening Levels Table, May 2010. ILCR = 10-6 or HQ = 0.1.

(4) Rationale Codes: Above Screening Levels (ASL), No Screening Level (NSL), Essential Nutrient (NUT), Below Screening Level (BSL)

COPC = Chemical of Potential Concern
NA = Not applicable or not available
ug/m3 = micrograms per cubic meter

FIGURE(S)

HGL—Human Health Risk Assessment,
Garvey Elevator Superfund Site—Hastings, NE

Figure 2.1
Source Area Surface Soil Sample Locations

Legend

Garvey Property Boundary

OU1 Boundary

Sediment Sample Location
(considered Surface Soil)

Soil Boring Location
(RI DPT sample)

** Detection within 10' Below Ground Surface*

0 150 300 600
Feet

N

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA
Source_Area_Soil_Sample_Locations.mxd
Project: EP9033.01.48.01
Revised: 11/18/10 ST
Source: ENSR GDB 2008, DNR

HGL
HydroGeoLogic, Inc

Figure 2.2
Source Area Subsurface Soil Sample Locations

Legend

Garvey Property Boundary

OU1 Boundary

Soil Boring Location
(RI DPT sample)

Note:
Only those samples with detections of site-related contaminants are shown.

** Detection within 10' Below Ground Surface*

0 87.5 175 350
Feet

N

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA
Source_Area_Soil_Sample_Locations.mxd
Project: EP9033.01.46.11
Revised: 04/05/11 RL
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

HGL—Risk Assessment Technical Memorandum,
Garvey Elevator Superfund Site—Hastings, NE

Figure 2.3
On-Property Groundwater Sample Locations

Legend

Site Boundary
Multi-Level Well Installed by ENSR
Monitoring Well
August 2009 DPT Groundwater Boring
December 2009 DPT Groundwater Boring

Note:
Only those wells screened from 119-142 ft bgs are included.
Red shading indicates a detection above 100 ug/L.
Yellow shading indicates a detection above 50 ug/L.
Green shading indicates a detection below 50 ug/L.
Only samples with detections of site-related contaminants are shown.

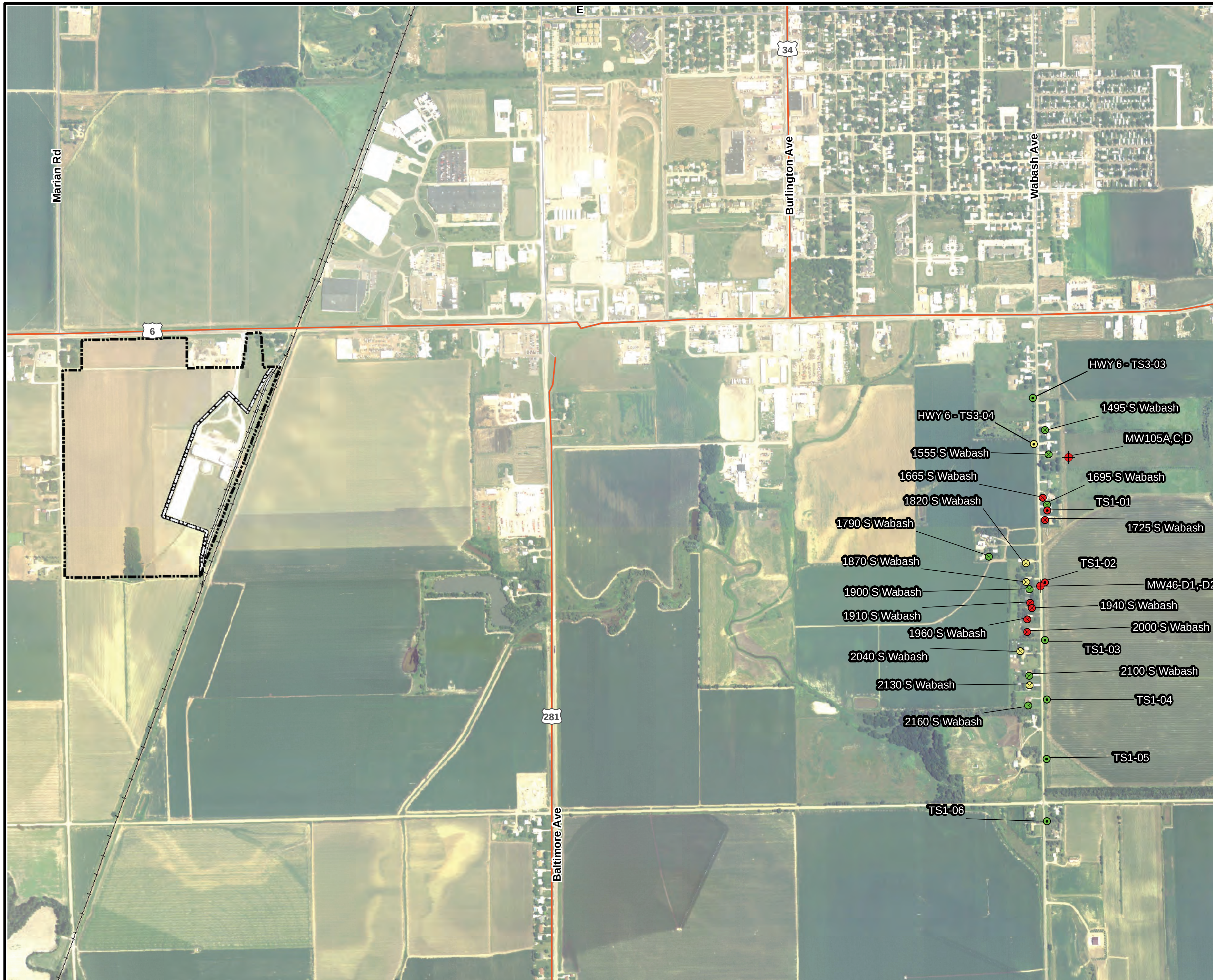
0 175 350 700
Feet

N

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA OnSite_GW_Sample_EC_Boring_Loc.mxd
Project: EP9033.01.46.11
Revised: 04/05/11 RL
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

Figure 2.4
Off-Property Groundwater Sample Locations



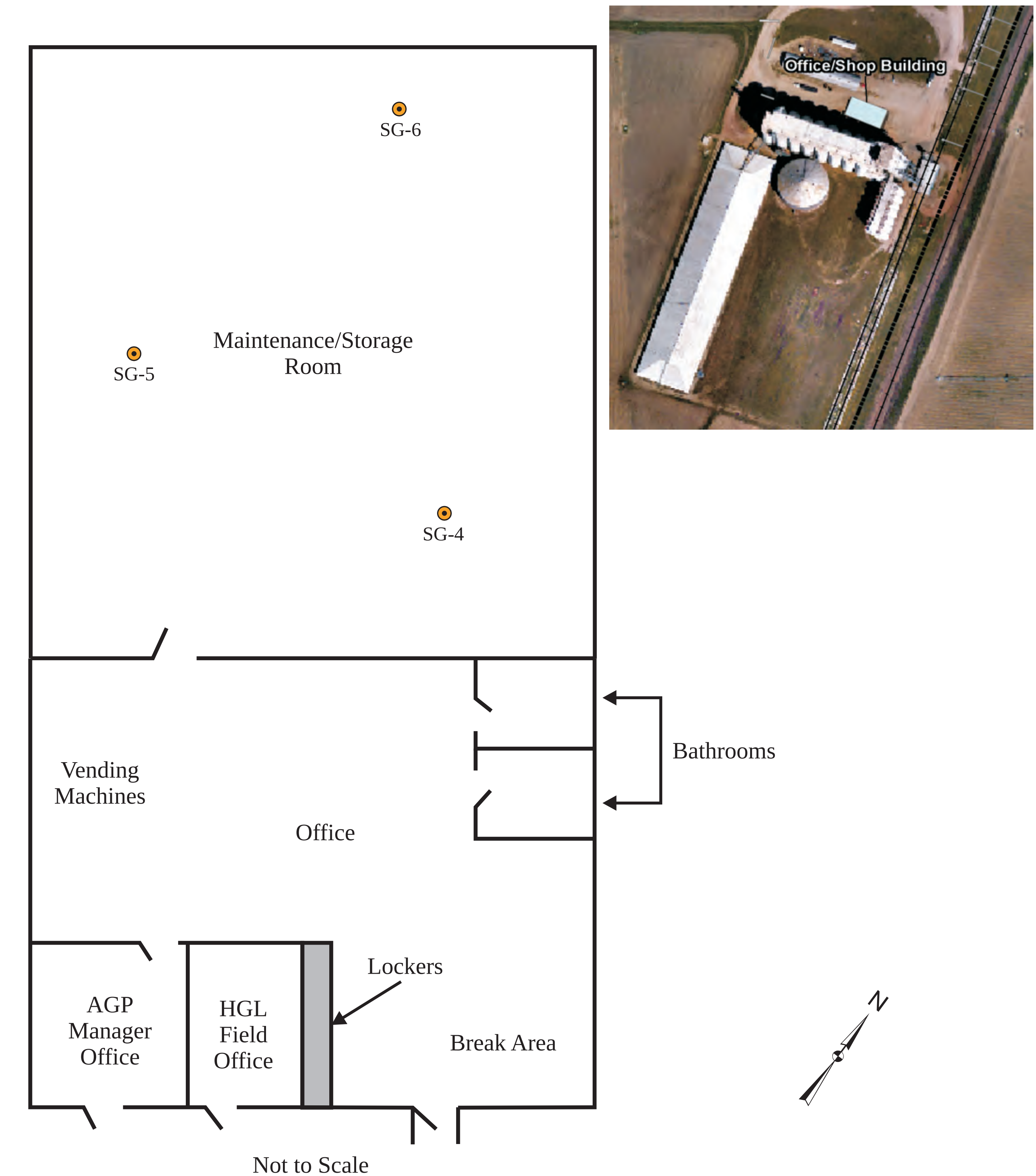
Legend

- Garvey Property Boundary
- OU1 Boundary
- Railroad
- Transect Line Boring Location
- RI Monitoring Well Location
- Private Well Location

Note:
Red shading indicates a detection above 100 ug/L.
Yellow shading indicates a detection above 50 ug/L.
Green shading indicates a detection below 50 ug/L.

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA
Off_Site_GW_Locs.mxd
Project: EP9012.01.55.01
Revised: 04/05/11 RL
Source: Hasting Utility Department,
Nebraska DNR, HGL Database 2008

HGL HydroGeoLogic, Inc



Filename: X:\EPA009\Garvey\GIS\MXDs\HHRA
*Proposed_OfficeShop_SubSlab_SoilGas_*
IndoorAir_Samples.cdr
Project: EP9033.01.46.13
Revised: 11/22/10 ST
Source: HGL Database

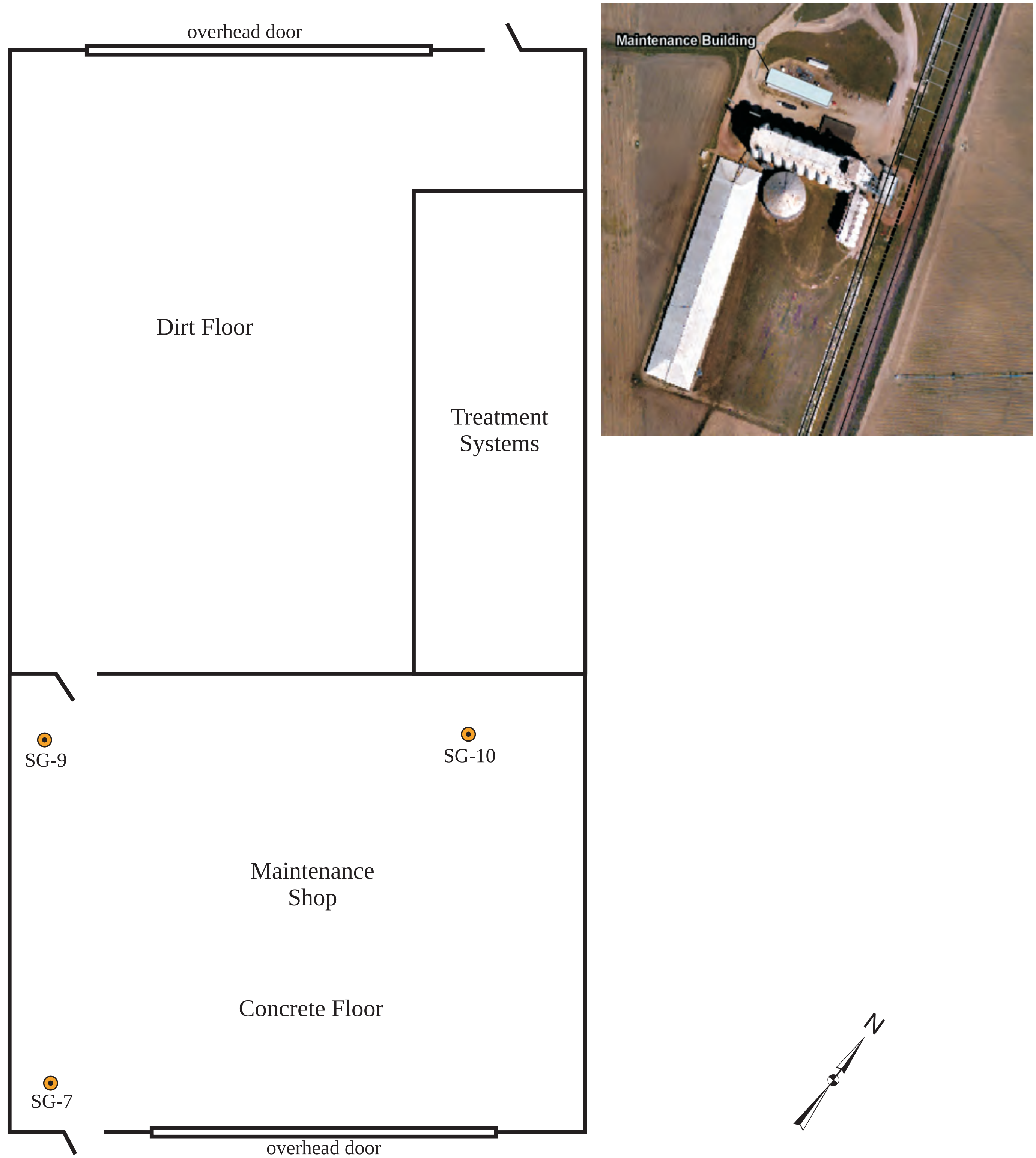
HGL HydroGeoLogic, Inc.

Legend

⊙ Subslab Soil Gas Sample Location

Note: only those samples with detections are shown.

Figure 2.5
Office/Shop Building
Subslab Soil Gas
Sample Locations



Not to Scale

Filename: X:\EPA009\Garvey\GIS\MXDs\HHRA MaintenanceShop_SubSlab_SoilGas_ IndoorAir_Samples.cdr
Project: EP9033.01.46.11
Revised: 11/22/10 ST
Source: HGL Database

HGL HydroGeoLogic, Inc.

Legend

Subslab Soil Gas Sample Location

Note: Only samples with detections are shown

Figure 2.6
Maintenance Building
Subslab Soil Gas
Sample Locations

3.0 EXPOSURE ASSESSMENT

This section provides a detailed discussion of the chemical and physical properties of the COPCs, all potential pathways of exposure, and the mechanisms of transport in the environment.

The purpose of the exposure assessment is to estimate the way a population could be exposed to chemicals at the site. This assessment involves projecting concentrations along potential pathways between sources and receptors. The projection is accomplished using site-specific data and, when necessary, modeling. Exposure can occur only when the potential exists for a receptor to contact the chemicals directly or when there is a mechanism for chemicals to be transported to a receptor. Without exposure there is no risk; therefore, the exposure assessment is a critical component of the risk assessment. Exposure assessment involves three distinct processes: 1) characterizing the exposure setting, 2) identifying exposure pathways, and 3) quantifying exposure.

3.1 CHARACTERIZATION OF THE EXPOSURE SETTING

This step describes the exposure setting in terms of physical characteristics of the site and populations that might be exposed. Population characteristics include the location of current and future receptors, the presence of sensitive sub-populations, and the activity patterns of current and future populations.

3.2 POTENTIAL EXPOSURE PATHWAYS

The conceptual site model (CSM) identified potential receptors based on a simple particle tracking process linking contaminant sources to potential receptors though environmental transport and fate mechanisms (Figure 1.3). It serves to identify the types of potential receptors, and potential routes of exposure under current and plausible future conditions. It does not necessarily provide receptor characterization information (for example, what type of resident) that is useful for the risk assessment. Table 3.1 adds to the exposure characterization by providing a full roster of possible receptors, exposure routes and exposure pathways, and the rationale for selection or exclusion of each exposure pathway.

Potentially contaminated media associated with the site include sediment, groundwater, and air. Because permanent surface water features are not present on the property, surface water was not considered complete exposure pathways.

The Garvey Elevator Superfund Site is currently an industrial setting. The CSM and exposure pathways
have been discussed. The general concept of current and future exposure includes the following features:

1. Current exposed populations include on-property workers, off-property residents, including individuals who farm, and visitors/trespassers.

2. At some time in the future, the main portions of the site (see Figure 1.4) may be converted from a workplace. Possible future uses are assumed to include residential use, industrial use, and some type of recreational use. Some combination of these is also possible. This conversion results in:
   - On-property industrial worker exposure
   - On-property residential exposure
   - On-property recreational exposure
3. Additionally, future use also includes continuation of the current off-property residential exposure scenario.

The exposure assumption that was used to estimate exposures are described below. In general, conservative standard default exposure factors taken directly from EPA Guidance were used. The tables called out in the following section list individual exposure equations, exposure factors, and references.

3.2.1 Current Receptor Scenarios

Land use surrounding the Garvey Elevators property ranges from residential to industrial/commercial and agricultural. Current receptors include off-property residents, off-property adult farmers, industrial/commercial workers, site visitors, and trespassers. Table 3.1 lists a full roster of potential pathways, receptor populations and rationale for selection for quantitative assessment. All pathways identified as Quant on Table 3.1 under the Type of Analysis were quantitatively evaluated.

3.2.2 Future Receptor Scenarios

All current receptor scenarios are also applicable scenarios in the future. The following are additional receptor scenarios for the future timeframe only.

Future receptors could include on-property residents (assuming the site is converted from its current industrial use), construction workers, recreational users, and temporary utility workers. Many of these potential receptors have common or similar contact and/or features and quantifying exposures for all was not necessary (for example, the exposure duration and contact rates for the Trespasser/Site Visitor and Recreational User are very similar). All pathways identified as Quant on Table 3.1 under the Type of Analysis were quantitatively evaluated.

3.2.3 Exposure Assumptions

Current and Future Industrial/Commercial Worker

The industrial/commercial worker was evaluated as two types of workers: indoor workers and outdoor workers. An indoor worker is someone who spends the majority of his/her work day inside a building, while an outdoor worker is someone who spends the majority of his/her time performing outdoor maintenance activities. The potential exposure media, routes, and reference to the associated exposure factors for each type of worker are identified below.

- Indoor worker:
  - Sediment: incidental ingestion and inhalation of fugitive dust emissions (see Tables 3.2 and 3.3).
  - Subslab soil gas: inhalation of volatiles from vapor intrusion (Table 3.3).
- Outdoor worker:
  - Sediment: direct contact (ingestion and dermal contact), and inhalation of fugitive dust emissions (see Tables 3.4 and 3.5).

Future Construction Worker

The construction worker could be exposed to chemicals in the sediment following pathways:

- Sediment: direct contact (ingestion, dermal contact), and inhalation and fugitive dust emissions generated by excavation activities (see Tables 3.6 and 3.7).

Current and Future Off-Property Residents

Past investigations have documented groundwater contamination off-property for a distance of at least 4.3 miles. Therefore, the off-property residential scenario was evaluated assuming residents with private wells are using groundwater for potable purposes. A resident may be exposed to chemicals in the groundwater via ingestion, dermal contact while showering or bathing, and inhalation of VOCs while showering. In addition, an off-property resident farmer may be exposed to groundwater contaminants through periodic use of groundwater for irrigation. The primary exposure route associated with irrigation water would be dermal contact. Volatilization contaminants would be rapidly diluted by the flux of ambient air, and incidental ingestion is expected to be negligible. Because the depth to groundwater ranges from 115 to 150 feet bgs, it was assumed that the groundwater vapor intrusion pathway is incomplete for the current off-property residential scenario. The potential exposure routes are identified below.

- Off-property Residents:
  - Groundwater (potable use): ingestion and dermal contact (see Tables 3.8 through 3.10), and inhalation of vapors (see Tables 3.11 through 3.13); and
  - Groundwater (irrigation use): incidental ingestion and dermal contact (see Table 3.14).

No off-property surface soil data were collected because Site contaminants were not expected to migrate to off-property soil due to the surface soil contamination area being limited to the close proximity of the leak sites. This hypothesis is supported by the few detections observed in the surface soil samples, and the non-detect results for the primary site contaminants, carbon tetrachloride and chloroform.

Residents may include both adults and children. Non-cancer hazards were quantified for both the adult resident and child resident. For carcinogenic risk, the most conservative approach is to use the age-adjusted resident. With this approach, it was assumed that the resident lives 30 years at the site, 6 years as a child and 24 years as an adult. Because cancer risks were calculated for the age-adjusted resident, the cancer risks for the child resident and adult were not quantified separately.

Future On-Property Residents

The RI has established that there is groundwater contamination beneath the Garvey Elevators property. In the absence of land use controls, it is possible that contaminated groundwater could be accessed for domestic use. In addition, this hypothetical future on-property residential use could include farming. Accordingly, the future on-property residential exposure scenario includes:

- Groundwater (potable use): ingestion and dermal contact (see Tables 3.8 through 3.10), and inhalation of vapors from showering (see Tables 3.11 through 3.13);
- Groundwater (irrigation): incidental ingestion and dermal contact (see Table 3.14);
- Sediment: direct contact (ingestion and dermal contact), and inhalation of fugitive dust emissions (see Tables 3.15 and 3.16); and
- Subslab soil gas: inhalation of volatiles from vapor intrusion (Table 3.17 and 3.18).

As described above for the off-property resident, non-cancer hazards were estimated separately for the child resident and adult resident, and the cancer risks were estimated for the age-adjusted resident. The future on-property residential scenario utilized the sediment, subslab soil gas, and groundwater data that are reflective of on-property conditions.

Future On-Property Trespasser

Following site conversion from solely an industrial setting, it is plausible that it could be used for a scenario involving periodic, nonintrusive use. A recreational application featuring an adolescent is plausible. Its components include:

- Future on-property adolescent trespasser
    - Sediment: direct contact (ingestion and dermal contact), and inhalation of volatile and fugitive dust emissions (see Tables 3.19 and 3.20).

3.3 QUANTIFYING EXPOSURES

This process is conducted in two steps: 1) estimation of exposure point concentrations, and 2) calculation of intakes. The analytical data were evaluated to determine the exposure point concentration for each COPC identified. Intake equations were developed for each potential receptor, exposure pathway, and intake route.

3.3.1 Exposure Point Concentrations

USEPA specifies that the reasonable maximum exposure (RME) concentration for a receptor population be calculated using the 95 percent upper confidence limit (UCL) of the arithmetic mean of chemical concentration (EPA, 1992). Ideally, the exposure point concentration (EPC) should be the true average concentration; however, because of the uncertainty associated with estimating the true average concentration based on a limited data set, the 95% UCL should be used as the EPC. However, for the data sets evaluated at this Site, the maximum concentration was used as the EPC for all groundwater, sediment, and subslab soil gas COPCs.

The screening identified volatile COPCs in the groundwater. To estimate the air concentration of VOCs during showering by the on-property resident, the approach presented in EPA RAGS Part B (EPA, 1991b) was used. Air concentrations were evaluated separately, using site subslab soil gas data. Therefore, the maximum concentration for subslab soil gas data was multiplied by a factor of 0.1 to account for crossing concrete into the overlying structure.

The maximum detected concentration; detection frequency, the exposure point concentration, and the statistical distribution of each COPC are presented in Tables 3.21 through 3.25.

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TABLE(S)

Table 3.1
Selection of Exposure Pathways
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Soil	Soil	Direct contact with soil	Indoor Industrial Worker	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	None	Pathway may be complete.
				Outdoor Industrial Worker	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
Current	Soil	Air	Fugitive dust and volatile emissions from soil	Indoor and Outdoor Industrial Worker	Adult	Inhalation	On-Site	Quant.	Pathway may be complete.
				Resident	Adult	Inhalation	Off-Site	None	Pathway is not complete.
					Child	Inhalation	Off-Site	None	Pathway is not complete.
					Age-Adjusted	Inhalation	Off-Site	None	Pathway is not complete.
			Vapor Intrusion	Indoor Industrial Worker	Adult	Inhalation	On-Site	Quant.	Pathway may be complete.
				Resident	Adult	Inhalation	Off-Site	None	Pathway is not complete.
					Child	Inhalation	Off-Site	None	Pathway is not complete.
					Age-Adjusted	Inhalation	Off-Site	None	Pathway is not complete.
Current	Groundwater	Groundwater	Potable water use	Resident [a]	Adult	Ingestion	Off-Site	Quant.	Pathway may be complete.
						Dermal Contact	Off-Site	Quant.	Pathway may be complete.
					Child	Ingestion	Off-Site	Quant.	Pathway may be complete.
						Dermal Contact	Off-Site	Quant.	Pathway may be complete.
					Age-Adjusted	Ingestion	Off-Site	Quant.	Pathway may be complete.
						Dermal Contact	Off-Site	Quant.	Pathway may be complete.
				Industrial Worker	Adult	Ingestion	On-Site	None	Pathway may be complete.
						Dermal Contact	On-Site	None	Pathway may be complete.
Current	Groundwater	Air	Inhalation of groundwater vapors while showering and vapor intrusion	Resident[a]	All	Inhalation	Off-Site	Quant.	Pathway may be complete.
			Inhalation of groundwater vapors during irrigation	Resident Farmer[b]	Adult	Inhalation	On-Site	None	Pathway may be complete.
			Vapor Intrusion	Industrial Worker	Adult	Inhalation	On-Site	None	Pathway is not considered complete.

Table 3.1
Selection of Exposure Pathways
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Soil	Soil	Direct contact with soil	Indoor Industrial Worker	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	None	Pathway may be complete.
				Outdoor Industrial Worker	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
				Construction Worker	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
				Recreational User[c]	All	Ingestion	On-Site	None	Pathway may be complete.
						Dermal Contact	On-Site	None	Pathway may be complete.
Future	Soil	Soil	Direct contact with soil.	Trespasser/Site Visitor[c]	Adult	Ingestion	On-Site	None	Pathway may be complete.
						Dermal Contact	On-Site	None	Pathway may be complete.
					Adolescent	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
				On-Site Resident [a]	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
					Child	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
					Age-Adjusted	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
Future	Soil	Air	Fugitive dust and volatile emissions from soil.	Industrial Worker	Adult	Inhalation	On-Site	Quant.	Pathway may be complete.
				Construction Worker	Adult	Inhalation	On-Site	Quant.	Pathway may be complete.
				Recreational User[c]	All	Inhalation	On-Site	None	Pathway may be complete.
				Trespasser/Site Visitor[c]	Adult	Inhalation	On-Site	None	Pathway may be complete.
					Adolescent	Inhalation	On-Site	Quant.	Pathway may be complete.
				On-Site Resident [a]	Adult	Inhalation	On-Site	Quant.	Pathway may be complete.
					Child	Inhalation	On-Site	Quant.	Pathway may be complete.
					Age-Adjusted	Inhalation	On-Site	Quant.	Pathway may be complete.
			Vapor Intrusion	Indoor Industrial Worker	Adult	Inhalation	On-Site	Quant.	Pathway may be complete.
				On-Site Resident[a]	All	Inhalation	On-Site	Quant.	Pathway may be complete.

Table 3.1
Selection of Exposure Pathways
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Groundwater	Groundwater	Potable water use	On-Site Resident [a]	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
					Child	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
					Age-Adjusted	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
				On-Site Farmer[b]	Adult	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
				Off-Site Resident[a]	Adult	Dermal Contact	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
					Child	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
					Age-Adjusted	Ingestion	On-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
				Off-Site Farmer[b]	Adult	Ingestion	Off-Site	Quant.	Pathway may be complete.
						Dermal Contact	On-Site	Quant.	Pathway may be complete.
		Air	Inhalation of groundwater vapors while showering and vapor intrusion	On-Site Resident[a]	All	Inhalation	On-Site	Quant.	Pathway may be complete.
				Off-Site Resident[a]	All	Inhalation	On-Site	Quant.	Pathway may be complete.
			Inhalation of groundwater vapors during irrigation	On-Site Farmer[b]	Adult	Inhalation	On-Site	None	Pathway may be complete.
				Off-Site Farmer[b]	Adult	Inhalation	Off-Site	None	Pathway may be complete.

Notes

[a] Residential exposures will be evaluated as: 1) Age-adjusted for carcinogenic, 2) child (0 - 6 years) for non-carcinogenic risks and 3) adult (7 - 30 years) for non-carcinogenic risks.

[b] Farm exposure, occasional contact with groundwater is a minor component (1-2%) of resident exposure.

[c] Recreational exposure generally enveloped trespasser and visitor.

Table 3.2
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INGESTION, INDOOR INDUSTRIAL WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Indoor (Industrial) Worker
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-S	Ingestion Rate of Sediment	mg/day	50	EPA, 2002	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	EF	Exposure Frequency	days/year	250	EPA, 2002	
	ED	Exposure Duration	years	25	EPA, 1991	
	CF	Conversion Factor	kg/mg RME	0.000001	- -	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	EPA, 1989	

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA, 2004. Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. OSWER 9285.7-02EP.

Table 3.3
VALUES USED FOR DAILY INTAKE CALCULATIONS - SOIL/SEDIMENT, INHALATION, INDOOR INDUSTRIAL WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Soil/Sediment
Exposure Medium: Soil/Sediment
Exposure Point: Site Soil/Sediment
Receptor Population: Indoor (Industrial) Worker
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Adjusted air concentration (mg/m^3) =
	ET	Exposure time	hours/day	8	EPA, 1991	CA xET x EF x ED x 1/AT
	EF	Exposure Frequency	days/year	250	EPA, 2002	
	ED	Exposure Duration	years	25	EPA, 1991	
	AT-C	Averaging Time (Cancer)	hours RME	613,200	EPA, 2009	
	AT-N	Averaging Time (Non-Cancer)	hours	219,000	EPA, 2009	

Sources:

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA, 2009. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. OSWER 9285.7-82, January 2009.

Table 3.4
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INGESTION AND DERMAL, OUTDOOR INDUSTRIAL WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Outdoor (Industrial) Worker
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-S	Ingestion Rate of Sediment	mg/day	100	EPA, 2002	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	EF	Exposure Frequency	days/year	225	EPA, 2002	
	ED	Exposure Duration	years	25	EPA, 1991	
	CF	Conversion Factor	kg/mg RME	0.000001	- -	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	EPA, 1989	
Dermal Absorption	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.1		CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	3,300	EPA, 2004	CS x SA x SSAF x DABS x CF x EF x
	SSAF	Sediment to Skin Adherence Factor	mg/cm^2-day	0.2	EPA, 2004	ED x 1/BW x 1/AT
	DABS	Dermal Absorption Factor Solids	--	chem. specific	EPA, 2004	
	CF	Conversion Factor	kg/mg	0.000001	- -	
	EF	Exposure Frequency	days/year	225	EPA, 2002	
	ED	Exposure Duration	years	25	EPA, 1991	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	EPA, 1989	

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA, 2004. Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. OSWER 9285.7-02EP.

Table 3.5
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INHALATION, OUTDOOR INDUSTRIAL WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Outdoor (Industrial) Worker
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Adjusted air concentration (mg/m^3) =
	ET	Exposure time	hours/day	8	EPA, 1991	CA xET x EF x ED x 1/AT
	EF	Exposure Frequency	days/year	225	EPA, 2002	
	ED	Exposure Duration	years	25	EPA, 1991	
	AT-C	Averaging Time (Cancer)	RME hours	613,200	EPA, 2009	
	AT-N	Averaging Time (Non-Cancer)	hours	219,000	EPA, 2009	

Sources:

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA, 2009. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. OSWER 9285.7-82, January 2009.

Table 3.6
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INGESTION AND DERMAL, CONSTRUCTION WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-S	Ingestion Rate of Sediment	mg/day	330	EPA, 2002	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	EF	Exposure Frequency	days/year	250	EPA, 1991	
	ED	Exposure Duration	years	1	EPA, 1991	
	CF	Conversion Factor	RME kg/mg	0.000001	- -	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	
Dermal Absorption	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.1		CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	3,300	EPA, 2002	CS x SA x SSAF x DABS x CF x EF x
	SSAF	Sediment to Skin Adherence Factor	mg/cm^2-day	0.3	EPA, 2002	ED x 1/BW x 1/AT
	DABS	Dermal Absorption Factor Solids	--	chem. specific	EPA, 2004	
	CF	Conversion Factor	kg/mg	0.000001	- -	
	EF	Exposure Frequency	days/year	250	EPA, 1991	
	ED	Exposure Duration	years	1	EPA, 1991	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA, 2004. Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. OSWER 9285.7-02EP.

Table 3.7
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INHALATION, CONSTRUCTION WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Adjusted air concentration (mg/m^3) =
	ET	Exposure time	hours/day	8	EPA, 1991	CA xET x EF x ED x 1/AT
	EF	Exposure Frequency	days/year	250	EPA, 1991	
	ED	Exposure Duration	years	1	EPA, 1991	
	AT-C	Averaging Time (Cancer)	hours RME	613,200	EPA, 2009	
	AT-N	Averaging Time (Non-Cancer)	hours	8,760	EPA, 2009	

Sources:

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2009. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. OSWER 9285.7-82, January 2009.

Table 3.8
Values Used for Daily Intake Calculations--Groundwater, Ingestion and Dermal, Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Potable Water Well
Receptor Population: Current/Future Resident
Receptor Age: Child

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cw	Chemical Concentration in Water	mg/L			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	L/day	1	EPA, 2008	Cw x IR x EF x ED / (BW x AT-N)
	EF	Exposure Frequency	days/year **RME**	350	EPA, 1991	
	ED	Exposure Duration	years	6	EPA, 1991	
	BW	Body Weight	kg	15	EPA, 1991	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	EPA, 1989	
Dermal Absorption	Cw	Chemical Concentration in Water	mg/L			CDI = Devent x SA x ED x EF/(BW x AT-N)
	CF	Conversion Factor	L/cm^3	0.001		
	SA	Skin Surface Area Available for Contact	cm^2/event	6,600	EPA, 2004	For inorganics:
	Devent	Dermally Absorbed Dose per Event	mg/cm^2-event	calculated	EPA, 2004	Devent = Cw x CF x Kp x tevent
	t_{event}	Exposure time	hours/event	1	EPA, 2004	
	EF	Exposure Frequency	events/year	350	EPA, 1991	
	ED	Exposure Duration	years	6	EPA, 1991	For organics:
	FA	Fraction absorbed	unitless	chem specific	EPA, 2004	If t_{event} < or = t*, then
	Kp	Permeability Coefficient	cm/hr	chem specific for metals calculated for organics	EPA, 2004	Devent = 2(FA)(Kp)(Cw)(CF)(6 x t_{event} x t_{event} x $1/p)^{1/2}$
	t_{event}	Lag time per event	hr/event	calculated	EPA, 2004	If t_{event} > t*, then
	B	Dimensionless constant	unitless	calculated	EPA, 2004	Devent =
	t*	Time to reach steady-state	hrs	calculated	EPA, 2004	
	BW	Body Weight	kg	15	EPA, 1991	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	EPA, 1989	

Notes:

cm^2 /event = square centimeter per event
cm/hr = centimeter per hour
hrs = hours
hr/event = hour per event
kg = kilogram
L/cm^3 = liters per cubic centimeter
L/day = liters per day
L/m^3 = liters per cubic meter
mg/L = milligrams per liter
mg/cm^2 -event = milligram per square centimeter per event
RME = reasonable maximum exposure

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.
EPA, 2008: Child-Specific Exposure Factors Handbook. EPA/600/R-06/096F.

Table 3.9
Values Used for Daily Intake Calculations--Groundwater, Ingestion and Dermal, Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Potable Water Well
Receptor Population: Current/Future Resident
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cw	Chemical Concentration in Water	mg/L			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	L/day	2	EPA, 1991	Cw x IR x EF x ED / (BW x AT-N)
	EF	Exposure Frequency	days/year RME	350	EPA, 1991	
	ED	Exposure Duration	years	30	EPA, 1991	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-N	Averaging Time (Non-cancer)	days	10,950	EPA, 1989	
Dermal Absorption	Cw	Chemical Concentration in Water	mg/L			CDI = Devent x SA x ED x EF/(BW x AT-N)
	CF	Conversion Factor (CF)	L/cm^3	0.001		
	SA	Skin Surface Area	cm^2/event	18,000	EPA, 2004	For inorganics:
	Devent	Dermally Absorbed Dose per Event	mg/cm^2-event	calculated	EPA, 2004	Devent = Cw x CF x Kp x tevent
	t_{event}	Exposure time	hours/event	0.58	EPA, 2004	
	EF	Exposure Frequency	events/year	350	EPA, 1991	
	ED	Exposure Duration	years	30	EPA, 1991	For organics:
	FA	Fraction absorbed	unitless	chem specific	EPA, 2004	If t_{event} < or = t*, then
	Kp	Permeability Coefficient	cm/hr	chem specific for metals calculated for organics	EPA, 2004	Devent = 2(FA)(Kp)(Cw)(CF)(6 x t_{event} x t_{event} x $1/p)^{1/2}$
	t_{event}	Lag time per event	hr/event	calculated	EPA, 2004	If t_{event} > t*, then
	B	Dimensionless constant	unitless	calculated	EPA, 2004	Devent = (FA)(Kp)(CF)(Cw)[$t_{event}/(1+B)+2t_{event}((1+3B+B^2/(1+B)^2)$]
	t*	Time to reach steady-state	hrs	calculated	EPA, 2004	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-N	Averaging Time (Non-cancer)	days	10,950	EPA, 1989	

Notes:

cm^2 /event = square centimeter per event
cm/hr = centimeter per hour
hrs = hours
hr/event = hour per event
kg = kilogram
L/cm^3 = liters per cubic centimeter
L/day = liters per day
L-year/kg-day = liters per year per kilograms per day
L/m^3 = liters per cubic meter
mg/L = milligrams per liter
mg/cm^2 -event = milligram per square centimeter per event
mg/m^3 = milligrams per cubic meter
RME = reasonable maximum exposure

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.

Table 3.10
Values Used for Daily Intake Calculations--Groundwater, Ingestion and Dermal, Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Potable Water Well
Receptor Population: Current/Future Resident
Receptor Age: Age-adjusted

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cw	Chemical Concentration in Water	mg/L			Chronic Daily Intake (CDI) (mg/kg-day) =
	IRage-adj	Ingestion Rate, age-adjusted	L-year/kg-day	1.09	calculated	Cw x IRage-adj x EF / AT-C
	IRc	Ingestion Rate - child	L/day RME	1	EPA, 2008	
	IRa	Ingestion Rate - adult	L/day	2	EPA, 1991	IRage-adj = (EDc x IRc/BWc) + (EDa x IRa/BWa)
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	EDc	Exposure Duration - child	years	6	EPA, 1991	
	EDa	Exposure Duration - adult	years	24	EPA, 1991	
	BWc	Body Weight - child	kg	15	EPA, 1991	
	BWa	Body Weight - adult	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
Dermal Absorption	Cw	Chemical Concentration in Water	mg/L			CDI = Deventc x SAc x EDc x EF/(BWc x AT-C) +
	CF	Conversion Factor (CF)	L/cm^3	0.001		Deventa x SAa x EDa x EF/(BWa x AT-C)
	SAc	Skin Surface Area - child	cm^2/event	6,600	EPA, 2004	For inorganics:
	SAa	Skin Surface Area - adult	cm^2/event	18,000	EPA, 2004	Devent = Cw x CF x Kp x tevent
	Devent	Dermally Absorbed Dose per Event	mg/cm^2-event	calculated	EPA, 2004	
	t_{event}	Exposure time	hours/event	0.58 for child 1 for adult	EPA, 2004	For organics:
	EF	Exposure Frequency	events/year	350	EPA, 1991	If t_{event} < or = t*, then
	EDc	Exposure Duration - child	years	6	EPA, 1991	
	EDa	Exposure Duration - adult	years	24	EPA, 1991	Devent = 2(FA)(Kp)(Cw)(CF)(6 x t_{event} x t_{event} x 1/p)$^{1/2}$
	FA	Fraction absorbed	unitless	chem specific	EPA, 2004	If t_{event} > t*, then
	Kp	Permeability Coefficient	cm/hr	chem specific for metals calculated for organics	EPA, 2004	Devent = (FA)(Kp)(CF)(Cw)[t_{event}/(1+B)+2t_{event}((1+3B+B^2/(1+B)^2)]
	t_{event}	Lag time per event	hr/event	calculated	EPA, 2004	
Dermal Absorption	B	Dimensionless constant	unitless	calculated	EPA, 2004	
	t*	Time to reach steady-state	hrs	calculated	EPA, 2004	
	BWc	Body Weight - child	kg	15	EPA, 1991	
	BWa	Body Weight - adult	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	

Notes:

cm^2 /event = square centimeter per event

cm/hr = centimeter per hour

hrs = hours

hr/event = hour per event

kg = kilogram

L/cm^3 = liters per cubic centimeter

L/day = liters per day

L-year/kg-day = liters per year per kilograms per day

L/m^3 = liters per cubic meter

mg/L = milligrams per liter

mg/cm^2 -event = milligram per square centimeter per event

mg/m^3 = milligrams per cubic meter

RME = reasonable maximum exposure

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.

EPA, 2008: Child-Specific Exposure Factors Handbook. EPA/600/R-06/096F.

Table 3.11
Values Used for Daily Intake Calculations--Groundwater, Inhalation, Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Potable Water Well
Receptor Population: Child Resident
Receptor Age: Child

Exposure Routes	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Cw	Chemical Concentration in Water	mg/L			CDI = Cw x K x ET x EF x ED x 1/CF x 1/AT-N
	ET	Exposure Time	hr/day	15 m^3/day, or 18 hrs/day	EPA, 2004	
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration	years	6	EPA, 1991	
	CF	Conversion Factor - time	hours/day	24	--	
	K	Volatilization Factor	L/m^3	0.5	Andelman 1990	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	EPA, 1989	

Notes:

cm^2 /event = square centimeter per event
cm/hr = centimeter per hour
hrs = hours
hr/event = hour per event
kg = kilogram
L/cm^3 = liters per cubic centimeter
L/day = liters per day
L/m^3 = liters per cubic meter
mg/L = milligrams per liter
mg/cm^2 -event = milligram per square centimeter per event
m^3/day = cubic meters per day
RME = reasonable maximum exposure

Sources:

- EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
- EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
- EPA, 1997: Exposure Factors Handbook, EPA/600/8-89/043.
- EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.

Table 3.12
Values Used for Daily Intake Calculations--Groundwater, Inhalation, Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Potable Water Well
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Cw	Chemical Concentration in Water	mg/L			CDI = Cw x K x ET x EF x ED x 1/CF x 1/AT-N
	ET	Exposure Time	hr/day	15 m^3/day, or 18 hrs/day	EPA, 2004	
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration	years	24	EPA, 1991	
	CF	Conversion Factor - time	hours/day	24	--	
	K	Volatilization Factor	L/m^3	0.5	Andelman 1990	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	EPA, 1989	

Notes:

cm^2 /event = square centimeter per event
cm/hr = centimeter per hour
hrs = hours
hr/event = hour per event
kg = kilogram
L/cm^3 = liters per cubic centimeter
L/day = liters per day
L/m^3 = liters per cubic meter
mg/L = milligrams per liter
mg/cm^2 -event = milligram per square centimeter per event
m^3/day = cubic meters per day
RME = reasonable maximum exposure

Sources:

- EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
- EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
- EPA, 1997: Exposure Factors Handbook, EPA/600/8-89/043.
- EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.

Table 3.13
Values for Daily Intake Calculation--Groundwater, Inhalation, Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Potable Water Well
Receptor Population: Resident
Receptor Age: Age-adjusted

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
	CA	Chemical Concentration	mg/L		Site-specific	Chronic Daily Intake (CDI) (mg/gk-day) =
	ET	Exposure Time	hours/day RME	15 m^3/day, or 18 hrs/day	EPA, 2004	CA x K x EF x [(ETa x EDa) + (ETc x EDc)] x 1/CF x 1/AT-C
	EF	Exposure Frequency	days/year	350	USEPA 1991	
Inhalation	CF	Conversion Factor - time	hours/day	24	--	
	EDa	Exposure Duration-Adult	years	24	USEPA 1991	
	AT-C	Averaging Time-Cancer	days	25550	USEPA 1991	
	EDc	Exposure Duration-Child	years	6	USEPA 1991	
	K	Volatilization Factor	L/m^3	0.5	Andelman 1990	

Notes:

cm^2 /event = square centimeter per event
cm/hr = centimeter per hour
hrs = hours
hr/event = hour per event
kg = kilogram
L/cm^3 = liters per cubic centimeter
L/day = liters per day
L-year/kg-day = liters per year per kilograms per day
L/m^3 = liters per cubic meter
mg/L = milligrams per liter
mg/cm^2 -event = milligram per square centimeter per event
m^3/day = cubic meters per day
RME = reasonable maximum exposure

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285
EPA, 1997: Exposure Factors Handbook, EPA/600/8-89/043.
EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.

Table 3.14
Values Used for Daily Intake Calculations--Groundwater, Ingestion and Dermal, Adult Resident Farmer
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Crop Irrigation
Receptor Population: Current/Future Resident
Receptor Age: Adult Farmer

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cw	Chemical Concentration in Water	mg/L			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR	Ingestion Rate	L/day	0.1	estimated	[Cw x IR x EF x ED / (BW x AT-N)] / 10
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration	RME years	24	EPA, 1991	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-N	Averaging Time (Non-cancer)	days	8,760	EPA, 1989	
Dermal Absorption	Cw	Chemical Concentration in Water	mg/L			CDI = Devent x SA x ED x EF/(BW x AT-N)
	CF	Conversion Factor (CF)	L/cm^3	0.001		
	SA	Skin Surface Area (head, hands, forearms)	cm^2/event	3,073	EPA, 2004	For inorganics:
	Devent	Dermally Absorbed Dose per Event	mg/cm^2-event	calculated	EPA, 2004	Devent = Cw x CF x Kp x tevent
	t_{event}	Exposure time	hours/event	0.25	EPA, 2004	
	EF	Exposure Frequency	events/year	6	EPA, 1991	
	ED	Exposure Duration	years	24	EPA, 1991	For organics:
	FA	Fraction absorbed	unitless	chem specific	EPA, 2004	If t_{event} < or = t*, then
	Kp	Permeability Coefficient	cm/hr	metals	EPA, 2004	Devent = 2(FA)(Kp)(Cw)(CF)(6 x t_{event} x t_{event} x $1/p)^{1/2}$
	t_{event}	Lag time per event	hr/event	calculated	EPA, 2004	If t_{event} > t*, then
	B	Dimensionless constant	unitless	calculated	EPA, 2004	Devent =
	t*	Time to reach steady-state	hrs	calculated	EPA, 2004	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-N	Averaging Time (Non-cancer)	days	8,760	EPA, 1989	

Notes:

cm^2 /event = square centimeter per event
cm/hr = centimeter per hour
hrs = hours
hr/event = hour per event
kg = kilogram
L/cm^3 = liters per cubic centimeter
L/day = liters per day
L-year/kg-day = liters per year per kilograms per day
L/m^3 = liters per cubic meter
mg/L = milligrams per liter
mg/cm^2 -event = milligram per square centimeter per event
mg/m^3 = milligrams per cubic meter
RME = reasonable maximum exposure

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA, 2004: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, EPA/540/R/99/005, July 2004.
EPA, 2009: Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final, EPA-540-R-070-002, January 2009.

Table 3.15
VALUES USED FOR DAILY INTAKE CALCULATIONS -SEDIMENT, INGESTIN AND DERMAL, CHILD RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Resident
Receptor Age: Child

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-S	Ingestion Rate of Sediment	mg/day	200	EPA, 1991	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration	years	6	EPA, 1991	
	CF	Conversion Factor	kg/mg RME	0.000001	- -	
	BW	Body Weight	kg	15	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	EPA, 1989	
Dermal Absorption	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.1		CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	2,800	EPA, 2004	CS x SA x SSAF x DABS x CF x EF x
	SSAF	Sediment to Skin Adherence Factor	mg/cm^2-day	0.2	EPA, 2004	ED x 1/BW x 1/AT
	DABS	Dermal Absorption Factor Solids	--	chem. specific	EPA, 2004	
	CF	Conversion Factor	kg/mg	0.000001	- -	
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration	years	6	EPA, 1991	
	BW	Body Weight	kg	15	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	EPA, 1989	

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2004. Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. OSWER 9285.7-02EP.

Table 3.16
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INGESTION AND DERMAL, ADULT RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Resident
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Sediment	mg/kg			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-S	Ingestion Rate of Sediment	mg/day	100	EPA, 1991	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration - cancer	years	24	EPA, 1991	
	ED	Exposure Duration - noncancer	years RME	30	EPA, 1991	
	CF	Conversion Factor	kg/mg	0.000001	- -	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	10,950	EPA, 1989	
Dermal Absorption	CS	Chemical Concentration in Sediment	mg/kg	see Table 3.1		CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	5,700	EPA, 2004	CS x SA x SSAF x DABS x CF x EF x
	SSAF	Sediment to Skin Adherence Factor	mg/cm^2-day	0.07	EPA, 2004	ED x 1/BW x 1/AT
	DABS	Dermal Absorption Factor Solids	--	chem. specific	EPA, 2004	
	CF	Conversion Factor	kg/mg	0.000001	- -	
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration - cancer	years	24	EPA, 1991	
	ED	Exposure Duration - noncancer	years	30	EPA, 1991	
	BW	Body Weight	kg	70	EPA, 1991	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	10,950	EPA, 1989	

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2004. Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. OSWER 9285.7-02EP.

Table 3.17
VALUES USED FOR DAILY INTAKE CALCULATIONS - SOIL/SEDIMENT, INHALATION, CHILD RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Resident
Receptor Age: Child

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Adjusted air concentration (mg/m^3) =
	ET	Exposure time	hours/day	24	EPA, 1991	CA xET x EF x ED x 1/AT
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration	years	6	EPA, 1991	
	AT-C	Averaging Time (Cancer)	hours RME	613,200	EPA, 2003	
	AT-N	Averaging Time (Non-Cancer)	hours	52,560	EPA, 2003	

Sources:

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2009. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. OSWER 9285.7-82, January 2009.

Table 3.18
VALUES USED FOR DAILY INTAKE CALCULATIONS - SOIL/SEDIMENT, INHALATION, ADULT RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Resident
Receptor Age: Adult

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Adjusted air concentration (mg/m^3) =
	ET	Exposure time	hours/day	24	EPA, 1991	CA xET x EF x ED x 1/AT
	EF	Exposure Frequency	days/year	350	EPA, 1991	
	ED	Exposure Duration - cancer	years	24	EPA, 1991	
	ED	Exposure Duration - noncancer	years RME	30		
	AT-C	Averaging Time (Cancer)	hours	613,200	EPA, 2009	
	AT-N	Averaging Time (Non-Cancer)	hours	262,800	EPA, 2009	

Sources:

EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA, 2009. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. OSWER 9285.7-82, January 2009.

Table 3.19
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INGESTION AND DERMAL, TRESPASSER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil
Exposure Point: Site Soil
Receptor Population: Recreational User
Receptor Age: Adolescent

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR-S	Ingestion Rate of Soil	mg/day	100	EPA, 1991	CS x IR-S x EF x ED x CF x 1/BW x 1/AT
	EF	Exposure Frequency	days/year	26	[2]	
	ED	Exposure Duration	years	9	[3]	
	CF	Conversion Factor	kg/mg RME	0.000001	- -	
	BW	Body Weight	kg	45	[4]	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,285	EPA, 1989	
Dermal Absorption	CS	Chemical Concentration in Soil	mg/kg	see Table 3.1		CDI (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm^2	16,260	[5]	CS x SA x SSAF x DABS x CF x EF x
	SSAF	Soil to Skin Adherence Factor	mg/cm^2-day	0.04	[6]	ED x 1/BW x 1/AT
	DABS	Dermal Absorption Factor Solids	--	chem. specific	EPA, 2004	
	CF	Conversion Factor	kg/mg	0.000001	- -	
	EF	Exposure Frequency	days/year	26	[2]	
	ED	Exposure Duration	years	9	[3]	
	BW	Body Weight	kg	45	[4]	
	AT-C	Averaging Time (Cancer)	days	25,550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,285	EPA, 1989	

Notes:
[1] Average ingestion rate for 8-16 year old receptor (100 mg/day).
[2] One day per week from mid-April through mid-October.
[3] Receptor assumed to be age 8-16 years.
[4] Average body weight for boys and girls combined, age 8-16 years. EPA, 1997.
[5] Average of head, hands, arms, legs, and feet, for male and female children, age 8-16 years. EPA, 1997.
[6] Geometric mean for children playing in dry soil. EPA 2004.

Sources:

EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1997. Exposure Factors Handbook
EPA, 2004. Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. OSWER 9285.7-02EP.

Table 3.20
VALUES USED FOR DAILY INTAKE CALCULATIONS - SEDIMENT, INHALATION, TRESPASSER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Air
Exposure Point: Soil
Receptor Population: Recreational User
Receptor Age: Adolescent

Exposure Routes	Parameter Code	Parameter Definition	Units	Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Adjusted air concentration (mg/m^3) =
	ET	Exposure time	hours/day	2	[1]	CA xET x EF x ED x 1/AT
	EF	Exposure Frequency	days/year	26	[2]	
	ED	Exposure Duration	years	9	[3]	
	AT-C	Averaging Time (Cancer)	hours RME	613,200	EPA, 2009	
	AT-N	Averaging Time (Non-Cancer)	hours	78,840	EPA, 2009	

Notes:

[1] Assumed adolescent spends two hours per day on the site.

[2] One day per week from midApril through midOctober.

[3] Receptor assumed to be age 5-13 years.

Sources:

EPA, 2009. Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final. OSWER 9285.7-82, January 2009.

Table 3.21
On-Property Groundwater
EXPOSURE POINT CONCENTRATION SUMMARY
FUTURE ON-PROPERTY RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future On-Site Resident
Medium: Groundwater
Exposure Medium: Groundwater

Chemical of Potential Concern	Units	Maximum Detected Concentration	Maximum Qualifier	Detection Frequency	Reasonable Maximum Exposure		
					Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzene	ug/L	4.0E+00		4/25	4.0E+00	Max	(1)
Carbon Tetrachloride	ug/L	1.3E+03		25/25	1.3E+03	Max	(1)
Chloroform	ug/L	1.8E+01		16/25	1.8E+01	Max	(1)
Trichloroethene	ug/L	7.3E+00		3/25	7.3E+00	Max	(1)

EPC = Exposure point concentration
ug/L = micrograms per liter
(1) Used maximum detected concentration

Table 3.22
Off-Property Groundwater
EXPOSURE POINT CONCENTRATION SUMMARY
CURRENT OFF-PROPERTY RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current Off-Property Resident Medium: Groundwater Exposure Medium: Groundwater

Chemical of Potential Concern	Units	Maximum Detected Concentration	Maximum Qualifier	Detection Frequency	Reasonable Maximum Exposure		
					Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Carbon tetrachloride	ug/L	9.6E+02		114/114	9.6E+02	Max	(1)
Chloroform	ug/L	1.4E+02		42/107	1.4E+02	Max	(1)
1,2-Dichloroethane	ug/L	3.0E+00		1/102	3.0E+00	Max	(1)

EPC = Exposure point concentration
ug/L = micrograms per liter
(1) Used maximum detected concentration

Table 3.23
Sediment
EXPOSURE POINT CONCENTRATION SUMMARY
CURRENT/FUTURE ON-PROPERTY SCENARIOS
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Medium: Sediment
Exposure Medium: Sediment

Chemical of Potential Concern	Units	Maximum Detected Concentration	Maximum Qualifier	Detection Frequency	Reasonable Maximum Exposure		
					Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)pyrene	mg/kg	2.3E-01		1/10	2.3E-01	Max	(1)
Benzo(b)fluoranthene	mg/kg	2.3E-01		1/10	2.3E-01	Max	(1)

EPC = Exposure point concentration
mg/kg = milligrams per kilogram
Statistical analyses performed using the EPA Software ProUCL, version 4.0.
(1) Use maximum detected concentration because there were not enough data to calculate a 95 percent UCL

Table 3.24
Subslab Soil Gas
EXPOSURE POINT CONCENTRATION SUMMARY
FUTURE RESIDENT
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future Resident
Medium: Soil gas
Exposure Medium: Indoor Air

Chemical of Potential Concern	Units	Maximum Detected Concentration	Maximum Qualifier	Detection Frequency	Reasonable Maximum Exposure		
					Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Chloroform	ug/m3	9.3E+00		3/6	9.3E+00	Max	(1)
Tetrachloroethene	ug/m3	1.4E+02		6/6	1.4E+02	Max	(1)
Trichloroethene	ug/m3	4.0E+00		1/6	4.0E+00	Max	(1)

EPC = Exposure point concentration
ug/m3 = micrograms per cubic meter
(1) EPCs are the maximum detected subslab soil gas samples multiplied by an attenuation factor of 0.1.

Table 3.25
Subslab Soil Gas
EXPOSURE POINT CONCENTRATION SUMMARY
CURRENT/FUTURE INDOOR INDUSTRIAL WORKER
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current/Future Indoor Industrial Worker
Medium: Soil gas
Exposure Medium: Indoor Air

Chemical of Potential Concern	Units	Maximum Detected Concentration	Maximum Qualifier	Detection Frequency	Reasonable Maximum Exposure		
					Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Chloroform	ug/m3	9.3E+00		3/6	9.3E+00	Max	(1)
Tetrachloroethene	ug/m3	1.4E+02		6/6	1.4E+02	Max	(1)

EPC = Exposure point concentration
ug/m3 = micrograms per cubic meter
(1) EPCs are the maximum detected subslab soil gas samples multiplied by an attenuation factor of 0.1.

4.0 TOXICITY ASSESSMENT

Toxicity assessment consists of two stages: hazard identification and dose-response assessment. Hazard identification evaluates whether a particular chemical can cause a particular health effect (such as cancer or birth defects) and if the adverse health effect occurs in humans. Hazard identification also evaluates the nature and strength of the evidence of causation. Dose-response assessment quantitatively evaluates toxicity information for a chemical to determine the relationship between the administered dose of that chemical to the incidence of a particular adverse effect in the exposed population. For the oral and dermal routes of exposure, toxicity values for carcinogens, also known as cancer slope factors (CSF), are expressed in units of cancer incidence per unit dose of chemical. For non-carcinogens, the toxicity values or reference doses (RfD) are expressed in terms of a threshold value below which adverse effects are not expected to be observed. For the inhalation route of exposure, cancer risk is assessed with inhalation unit risk (IUR) values. IUR is the upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 $\mu g/m^3$ in air. Non-cancer risk is assessed using reference concentrations (RfC). An RfC is an estimate of a continuous inhalation exposure to the human population that is likely to be without an appreciable risk of deleterious effects during a lifetime.

Toxicity values promulgated by EPA are subject to a scientific peer review. In the development of toxicity values, the EPA gathers toxicological information from a variety of sources including experimental animal studies, epidemiologic investigations, and clinical human studies. Well-conducted epidemiologic studies that show a positive correlation between an agent and a disease represent the most convincing evidence about human risk. At present, human data adequate to serve as the sole basis for the development of toxicity values are available for only a few chemicals. In most cases where there are insufficient direct human data, EPA uses toxicity information developed from experiments conducted on non-human mammals such as rats, mice, dogs, or rabbits.

For this HHRA, toxicity values were obtained in accordance with the hierarchy outlined in the 2003 Office of Solid Waste and Emergency Response (OSWER) Directive 9285.7-53 (EPA, 2003). The toxicity values were also reviewed against the November 2010 USEPA RSL tables.

4.1 NON-CANCER EFFECTS

The RfD and RfC are the toxicity values used in assessing non-cancer health effects from oral and inhalation exposure, respectively. For non-cancer health effects, the level of exposure below which no adverse health effects develop is termed the threshold level or threshold dose. RfDs and RfCs represent exposure levels which are well below threshold. Each value is an estimate of daily exposure to the general human population (including sensitive sub-populations) that is unlikely to pose an appreciable likelihood of adverse effects during a given term of exposure.

The RfD and/or RfC for a chemical are derived from experimental no observed adverse effect levels (NOAELs) or lowest observed adverse effect levels (LOAELs) by application of uncertainty factors (UFs). Uncertainty factors of 10 are used to protect sensitive sub-populations and to account for interspecies variability. A UF of 10 is also used when the toxicity value is derived from a LOAEL rather than a NOAEL or to account for data being obtained from sub-chronic rather than chronic studies.

RfD values are expressed as milligram per kilogram per day (mg/kg/d), and RfC values are expressed as a chemical concentration in air in milligrams per cubic meter (mg/m^3).

There are no dermal absorption toxicity values currently available, which necessitates the use of oral toxicity values. However, oral values are typically developed from laboratory animal studies and reflect an administered (in feed or water) rather than an absorbed (through the gastrointestinal tract) dose. The degree of gastrointestinal absorption varies widely among different chemicals with some being readily absorbed and some being poorly absorbed. To reflect this phenomenon, default gastric absorption efficiency factors presented in *RAGS Part E, Supplemental Guidance for Dermal Risk Assessment* (EPA, 2004) were used to modify oral RfD values for evaluating risk through dermal exposure.

RfD and RfC values, as well as non-cancer toxicity information, are presented in Tables 4.1 and 4.2, respectively.

4.2 POTENTIALLY CARCINOGENIC EFFECTS

The toxicity values used in assessing carcinogenic risk are CSFs and IUR values. These represent the 95% UCL on the probability that a carcinogen will cause cancer at a dose of 1 mg/kg/d or from exposure to a concentration of 1 microgram per cubic meter ($\mu g/m^3$) in air over a lifetime. Unlike most non-carcinogenic health effects, carcinogenesis is not believed to conform to the concept of a threshold dose. Mechanistic data indicate that even the smallest dose of a carcinogen can lead to a clinical state of disease (USEPA 2005). For this reason, it is not possible to determine a no-response dose, but rather it is necessary to relate a specific dose to the statistical probability of a carcinogenic response.

For carcinogenic effects, the substance is given a weight-of-evidence classification and a slope factor is calculated. To determine the weight-of-evidence classification, the available evidence is evaluated to determine the likelihood that the agent is a human carcinogen. Based on the potency of the agent as a carcinogen in experimental animals and/or humans, the slope factor or inhalation unit risk is developed. Slope factors and inhalation unit risks are available in Integrated Risk Information System (IRIS) and/or Provisional Peer Reviewed Toxicity Values (PPRTV) for many substances categorized by EPA as A, B, or C carcinogens. Class A status indicates a known human carcinogen. Class B indicates a probable human carcinogen with B1 indicating limited human data and sufficient animal data and class B2 indicates sufficient evidence in animals and inadequate or no evidence in humans. Class C indicates a possible human carcinogen with inadequate human data and limited animal data.

As with RfDs, slope factors are not available for dermal exposure. Default gastric absorption efficiency factors presented in *RAGS Part E, Supplemental Guidance for Dermal Risk Assessment* (EPA, 2004) were used to modify oral CSF values for evaluating risk through dermal exposure.

CSFs and IURs, as well as carcinogenic toxicity information, are presented in Tables 4.3 and 4.4, respectively.

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TABLE(S)

TABLE 4.1
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
Garvey Elevator Superfund Site
Hastings, NE

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YY) [3]
1,2-Dichloroethane	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	NA	NA	PPRTV	May-10
Benzene	Chronic	4.0E-03	mg/kg-day	1	4.0E-03	mg/kg-day	Lymphocytes	300/1	IRIS	May-10
Carbon Tetrachloride	Chronic	4.0E-03	mg/kg-day	1	4.0E-03	mg/kg-day	Liver	1000/1	IRIS	May-10
Chloroform	Chronic	1.0E-02	mg/kg-day	1	1.0E-02	mg/kg-day	Liver	100/1	IRIS	May-10
Trichloroethene		NV	mg/kg-day	1	NV	mg/kg-day	NA			
Benzo(a)pyrene		NV	mg/kg-day	1	NV	mg/kg-day	NA			
Benzo(b)fluoranthene		NV	mg/kg-day	1	NV	mg/kg-day	NA			

IRIS = EPA Integrated Risk Information System

RSL = Oak Ridge National Laboratory Regional Screening Level Table

PPRTV = EPA's Provisional Peer-Reviewed Toxicity Value

NV = no toxicity value

Oral-to-dermal adjustment factor for aluminum provided by J. Hubbard, EPA Region III

(1) EPA 2004. RAGS Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment).

(2) Oral RfD*Oral to Dermal Adjustment Factor = Adjusted Dermal RfD

(3) For IRIS values, date that IRIS was searched

For RSL values, date table was downloaded

For PPRTV values, date the file was downloaded from the database

Notes:

RfD for cadmium based on diet exposure (RfD for water exposure differs)

Target organ for cobalt obtained from Agency for Toxic Substance and Disease Registry

TABLE 4.2
NON-CANCER TOXICITY DATA -- INHALATION
Garvey Elevator Superfund Site
Hastings, NE

Chemical of Potential Concern	Chronic/ Subchronic	RfC Value	RfC Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YY) [1]
1,2-Dichloroethane	Chronic	2.4E+00	mg/m3	NA	NA	ATSDR	May-10
Benzene	Chronic	3.0E-02	mg/m3	Lymphocytes	300/1	IRIS	May-10
Carbon Tetrachloride	Chronic	1.0E-01	mg/m3	Liver	100/1	IRIS	May-10
Chloroform	Chronic	9.8E-02	mg/m3	NA	NA	ATSDR	May-10
Tetrachloroethene	Chronic	2.7E-01	mg/m3	NA	NA	ATSDR	May-10
Trichloroethene		NV	mg/m3	NA			May-10
Benzo(a)pyrene		NV	mg/m3	NA			May-10
Benzo(b)fluoranthene		NV	mg/m3	NA			May-10

IRIS = EPA Integrated Risk Information System

NV = no toxicity value

PPRTV = EPA's Provisional Peer-Reviewed Toxicity Value

RSL = Oak Ridge National Laboratory Regional Screening Level Table

CalEPA - Calfiornia Environmental Protection Agency

(1) For IRIS values, date that IRIS was searched

For RSL values, date table wass downloaded

For PPRTV values, date the file was downloaded from the database

For CalEPA, date that database was searched

TABLE 4.3
CANCER TOXICITY DATA -- ORAL/DERMAL
Garvey Elevator Superfund Site
Hastings, NE

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence/ Cancer Guideline Description	Source	Date (MM/DD/YY) [3]
1,2-Dichloroethane	9.1E-02	1	9.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	May-10
Benzene	5.5E-02	1	5.5E-02	$(mg/kg\text{-}day)^{-1}$	A	IRIS	May-10
Carbon Tetrachloride	7.0E-02	1	7.0E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	May-10
Chloroform	3.1E-02	1	3.1E-02	$(mg/kg\text{-}day)^{-1}$	NA	CalEPA	May-10
Trichloroethene	5.9E-03	1	5.9E-03	$(mg/kg\text{-}day)^{-1}$	NA	CalEPA	May-10
Benzo(a)pyrene	7.3E+00	1	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	May-10
Benzo(b)fluoranthene	7.3E-01	1	7.3E-01	$(mg/kg\text{-}day)^{-1}$	NA	RSL	May-10

IRIS = Integrated Risk Information System

RSL = Oak Ridge National Laboratory Regional Screening Level Table

NV= No toxicity value available

(1) EPA 2004. RAGS Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment).

(2) ORAL CSF/ Oral to Dermal Adjustment Factor = Adjusted Dermal CSF

(3) For IRIS values, date that IRIS was searched

For RSL values, date table was downloaded

CalEPA - California Environmental Protection Agency

[4] Weight of evidence from IRIS, slope factor from RSL Table

Weight of Evidence:

A - Human carcinogen

D - Not classifiable as a human carcinogen

B2 - Probable human carcinogen - indicates sufficient evidence in animals and

inadequate or no evidence in humans

TABLE 4.4
CANCER TOXICITY DATA -- INHALATION
Garvey Elevator Superfund Site
Hastings, NE

Chemical of Potential Concern	Inhalation Unit Risk (per ug/m^3)	Inhalation Unit Risk per mg/m3	Weight of Evidence/ Cancer Guideline	Source	Date (MM/DD/YY) [1]
1,2-Dichloroethane	2.6E-05	2.6E-02	B2	IRIS	May-10
Benzene	7.8E-06	7.8E-03	A	IRIS	May-10
Carbon Tetrachloride	6.0E-06	6.0E-03	B2	IRIS	May-10
Chloroform	2.3E-05	2.3E-02	B2	IRIS	May-10
Tetrachloroethene	5.9E-06	5.9E-03	NA	CalEPA	May-10
Trichloroethene	2.0E-06	2.0E-03	NA	CalEPA	May-10
Benzo(a)pyrene	1.1E-03	1.1E+00	NA	CalEPA	May-10
Benzo(b)fluoranthene	1.1E-04	1.1E-01	NA	CalEPA	May-10

Description

IRIS = Integrated Risk Information System

NV = no tpxicity value

RSL = Oak Ridge National Laboratory Regional Screening Level Table

CalEPA = California Environmental Protection Agency

(1) For IRIS values, date that IRIS was searched

For RSL values, date table was downloaded

[3] For nickel, used toxicity value for nickel refinery dust

For CalEPA, date database was searched.

5.0 RISK CHARACTERIZATION AND UNCERTAINTY ANALYSIS

The final stage of the HHRA process is risk characterization and uncertainty analysis. The risk characterization step integrates information from the toxicity and exposure assessments to express risk quantitatively. The following two subsections define the general risk characterization process for evaluating exposure to non-carcinogenic and carcinogenic chemicals. Risk characterization for each potentially exposed population and a qualitative uncertainty analysis then follow.

5.1 GENERAL NON-CARCINOGENIC RISK DISCUSSION

To characterize non-carcinogenic effects, toxicity values are used in conjunction with applicable dose estimates for each exposure scenario to estimate the potential for adverse health effects. Chemical-specific average daily doses calculated for each exposure pathway are compared with the medium-specific reference value, and RfD or RfC for inhalation exposure, for that chemical. If the estimated dose does not exceed the reference value, then adverse non-carcinogenic health effects are not expected. The comparison of media-specific average daily dose to the appropriate reference value is expressed mathematically as a hazard quotient (HQ), which is the dose divided by the reference value:

$$HQ = Intake\ (mg/kg/d)\ /\ RfD\ (mg/kg/d)$$

$$HQ = Intake\ (\mu g/m^3)\ /[RfC\ (mg/m^3)\ x\ 1000\ \mu g/mg]$$

HQs for individual chemicals within an identified complete exposure pathway are summed to give an overall hazard index (HI). Pathway HIs are then summed for a total exposure HI. A target organ analysis is performed in order to account for differences in toxic mechanisms among the COPCs. The summation of chemical and pathway HI assumes that simultaneous sub-threshold exposures to multiple chemicals could result in incrementally greater human health effects. This assumption is conservative and health-protective. Chemicals can adversely affect several organs tissues and other physiological systems. Those chemicals that exert similar adverse effects on the same target organs, and/or via the same mechanisms of action are evaluated as having additive risk. If the total HI is 1 or less, it is unlikely for even sensitive populations to experience adverse health effects within the described scenario.

5.2 GENERAL CARCINOGENIC RISK DISCUSSION

The ability of a chemical to increase the incidence of cancer in a population can be represented by either the CSF of the Unit Risk (UR). Cancer encompasses a variety of diseases. Carcinogenesis is a complex multistep process that is not well characterized. Carcinogenic risk is expressed as a probability of developing a carcinogenic response as a result of exposure to a given chemical over lifetime. The CSF is derived generally on a chemical specific basis using mathematical models that express the potency of each carcinogen. The CSF represents an upper-bound estimate of cancer risk and is expressed as the risk per unit dose $(mg/kg/d)^{-1}$. For air exposure scenarios, the unit risk is expressed as per $\mu g/m^3$. Several models are available to derive a dose-response relations for carcinogens all of which employ conservative assumptions including the "one-hit" or linearized multi-stage models that assume that exposure to one molecule of a carcinogen can begin the development of cancer. This is an appropriately conservative assumption but may underestimate risk for carcinogens that act through a threshold mechanism. The EPA ranks carcinogens based on the weight of evidence for each chemical or class of chemicals in the case of PCBs and polynuclear aromatic hydrocarbon (PAHs). Known human carcinogens are in Group A, probable human carcinogens (Group B), possible human carcinogens (Group C), not classifiable (Group D) and not carcinogenic in humans (Group E). This hierarchy is used by EPA to derive these classifications and incorporates a robust evaluation scheme that is inherently health protective.

The estimated dose for each carcinogen is multiplied by the corresponding slope factor to calculate the incremental lifetime cancer risk (ILCR). The expression is as follows:

$$ILCR = Intake\ (mg/kg/d) \times CSF\ (mg/kg/d)^{-1}$$

$$ILCR = Intake\ (\mu g/m^3) \times IUR\ (\mu g/m^3)^{-1}$$

For simultaneous exposure to several carcinogens, the calculated ILCRs are summed within each pathway and then across all pathways to yield the total ILCR posed by a site. This approach represents the probability of developing a carcinogenic response which is solely attributable to exposure to chemicals from the site and is in excess of the general background risk. Based on National Cancer Institute (NCI) statistics (NCI, 1990), background risk is estimated to be more than thirty percent or 0.33 (3.3×10^{-1} or 3.3E-01 in scientific notation), because approximately one in three people in the United States will develop some form of cancer during a lifetime.

Based on the conservative assumption stated earlier that any exposure to a carcinogen poses some risk, zero risk is theoretically unachievable. Therefore, EPA has developed a target risk range of one in one million (10-6) to one in ten thousand (10-4) for use in determining acceptable cancer risks. In other words, a cancer risk greater than one in 10,000 would generally be considered unacceptably high, while risks within the range would be acceptable depending upon site use. Cancer risks of one in a million or less are generally considered *de minimus* or insignificant. The concept of insignificance can be numerically illustrated by adding the excess cancer risk of one in a million (1.0E-06) to the NCI background cancer risk in the United States (3.3E-01). This sum results in a total lifetime cancer risk of 0.330001.

5.3 CANCER RISK AND HAZARD ESTIMATES

The following subsections summarize the results of the risk characterization for the populations evaluated for site. Detailed risk characterizations, including the calculation of chemical intakes, are provided in Tables 5.1 through 5.18.

This section presents the carcinogenic and non-carcinogenic human health risk estimates for each exposure scenario evaluated in this human health risk assessment. The calculated risks are compared to the EPA's target cancer range of 10^{-6} to 10^{-4} for carcinogenic effects and an HI of

1 on a target organ basis for non-carcinogenic effects (EPA, 1991).

5.3.1 Industrial Worker (Indoor and Outdoor)

The current and future indoor industrial worker scenario was evaluated for the exposure to COPCs in sediment via incidental ingestion and inhalation as well as from subslab vapor intrusion into indoor air. The potential risks to the current and future indoor industrial worker are summarized in Table 5.19. The total HI is 0.1, which is less than the target value of 1. The total ILCR for all pathways is 9E-05, which is within the EPA target risk range of 10-6 to 10-4. Based on this evaluation, the COPCs in sediment and subslab vapor intrusion do not present a significant risk to a current or future indoor industrial worker under the assumed exposure conditions.

The current and future outdoor industrial worker was evaluated for the exposure to COPCs in sediment via ingestion, dermal absorption and inhalation. The potential risks to the current and future outdoor industrial worker are summarized in Table 5.20. Because the two COPCs do not have non-cancer toxicity values, the total HI is zero. The total ILCR for all pathways is 1E-06, which is equal to the low end the EPA target risk range of 10-6 to 10-4. Based on this evaluation, the COPCs in sediment do not present a significant risk to a current or future outdoor industrial worker under the assumed exposure conditions.

5.3.2 Future Construction Worker

The future construction worker was evaluated for exposure to COPCs in sediment via ingestion, dermal absorption and inhalation. The potential risks to the future construction worker are summarized in Table 5.21. Because the COPC does not have a non-cancer toxicity value, the total HI is zero. The total ILCR for all pathways is 1E-07, which falls below the EPA target risk range of 10-6 to 10-4. Based on this evaluation, the presence of the COPCs in sediment do not present a significant risk to a future construction worker under the assumed exposure conditions.

5.3.3 Current and Future Trespasser

The current and future adolescent trespasser was evaluated for the exposure to COPCs in sediment. The potential risks to the current and future trespasser are summarized in Table 5.22. Because the two COPCs do not have non-cancer toxicity values, the total HI is zero. The total ILCR for all pathways is 2E-07, which falls below the EPA target risk range of 10-6 to 10-4. Based on this evaluation, the COPCs in sediment do not present a significant risk to a current or future trespasser under the assumed exposure conditions.

5.3.4 Current and Future Off-Property Resident

The current and future off-property resident was evaluated for exposure to COPCs in groundwater. The non-cancer hazards for the current/future off-property child resident are summarized in Table 5.23. The total HI for the current/future off-property child resident is 24, which is greater than the target value of 1. Therefore, the risk assessment quantified the HI on a target organ basis. The organ-specific HI value for the liver exceeded 1 (HI = 24). Carbon tetrachloride is the chemical responsible for the elevated liver toxicity.

The non-cancer hazards for the current/future off-property adult resident are summarized in Table 5.24. The total HI for the current/future off-property adult resident is 11, which is greater than the target value of 1. Therefore, the risk assessment quantified the HI on a target organ basis. The organ-specific HI value for the liver exceeded 1 (HI = 11). The primary component of the non-cancer hazard is carbon tetrachloride in tap water.

The cancer risk for the current/future off-property age-adjusted resident is presented in Table 5.25. The total ILCR of 1E-03 exceeds the EPA target risk range of 10-6 to 10-4. The primary chemical contributor to cancer risk is carbon tetrachloride (ingestion and dermal contact). Based on this evaluation, the COPCs in off-property groundwater may present a significant risk to a current resident under the assumed exposure conditions.

5.3.5 Future On-Property Resident

The future resident was evaluated for exposure to COPCs in sediment, subslab soil gas, and on-property groundwater. The non-cancer hazards for the future child resident are summarized in Table 5.26. The total HI for the future child resident is 34, which is greater than the target value of 1. Therefore, the risk assessment quantified the HI on a target organ basis. The HI for the liver exceeded 1 (HI = 31). The primary components of the non-cancer hazard is carbon tetrachloride (ingestion, inhalation, and dermal) and TCE (ingestion) in groundwater.

The non-cancer hazards for the future adult resident are summarized in Table 5.27. The total HI for the future adult resident is 16, which is greater than the target value of 1. Therefore, the risk assessment quantified the HI on a target organ basis. The HI for the liver exceeded 1 (HI = 14). The primary component of the non-cancer hazard is carbon tetrachloride (ingestion, inhalation, and dermal) in groundwater.

The cancer risk for the future age-adjusted resident is presented in Table 5.28. The total ILCR of 2E-03 exceeds the EPA target risk range of 10-6 to 10-4. The cancer risk exceeds the EPA target risk range for vapor intrusion (ILCR = 4E-04) and groundwater as tap water (2E-03). The primary chemical component of the cancer risk is inhalation of PCE via subslab soil gas vapor intrusion and ingestion of and dermal contact with carbon tetrachloride in groundwater. Based on this evaluation, the COPCs in on-property subslab soil gas and groundwater may present a significant risk to a future resident under the assumed exposure conditions.

5.4 UNCERTAINTY ASSESSMENT

Risk assessment requires incorporating a number of assumptions which introduce unavoidable uncertainty into the risk and hazard estimates and subsequently to the overall risk characterization. Uncertainty is introduced as a result of a lack of information associated with each phase of the risk assessment process including data sampling and analysis, hazard identification, exposure assessment and toxicity assessment. Uncertainty reflects a lack of perfect data and can be reduced through generating and incorporating additional data. Variability is a natural uncertainty that reflects the diversity and heterogeneity of a well characterized population. Variability cannot be reduced by more data but can be evaluated through the use of appropriate conservative assumptions. The following subsections discuss the uncertainties resulting from chemical identification, exposure assessment, and toxicity assessment.

5.4.1 Uncertainty Associated with Chemical Identification

At any site, it is possible that there may be more individual chemical substances present than those identified in the sampling and analysis effort. The environmental samples were analyzed for VOCs, SVOCs, pesticides, and PCBs. Although the various environmental media were not analyzed for the presence of metals, it is unlikely that metals would have been associated with the historical site operations. The lack of metals data could result in underestimation of the potential overall risk, but it is expected that these risks would reflect background conditions, and therefore, would not be considered in the selection of the site remedy, The primary chemicals used at the grain storage facility were fumigants and have been captured by the analytical suite selected for the investigation. For this reason, the analytical suites selected for the investigation likely minimizes uncertainty in the identification of site-related chemicals.

Sample collection and analytical laboratory analysis introduces uncertainty into the datasets because of inherent environmental media heterogeneity, and the sample handling/processing required for chemical analysis. This uncertainty can result in over-estimating or under-estimating potential risks. To mitigate this uncertainty, samples used for the HHRA were collected according to standard practices as outlined in the EPA-approved field sampling plan (FSP). In addition, QC/QA field samples were collected and analyzed to ensure that potential field-related uncertainties were identifiable. The analytical laboratories were required to follow the QC/QA procedures defined for the analytical methods. To ensure that the results reflected defensible laboratory techniques, only data obtained and validated in accordance with an EPA-approved QAPP were used for the HHRA (See Section 4.0 of the RI for more details). The use of only those data collected in a defensible manner and with appropriate QC samples minimizes the uncertainty associated with field collection and laboratory analysis.

5.4.2 Uncertainty Associated with Analytical Method Quantitation Limits

Another aspect of chemical identification is whether the analytical method was sufficiently sensitive to detect potential contaminants at levels that could pose a threat to human health. EPA approved analytical methods were used to generate the data used in the HHRA. These analytical methods use a rigorous process for establishing the limits of detection for each analyte based on peer-reviewed procedures. Instrument Detection Limits, Method Detection Limits, and Reporting Limits (RLs) all have specific uses depending on defined data quality objectives. For this HHRA, analytical sensitivity is reflected in the RL. The method RLs for VOC analytes that were not detected were compared to the RSLs. This comparison is presented for each medium below.

5.4.2.1 Soil

The RLs for analytes not detected in any soil samples are compared to the residential soil RSLs in Table 5.29. One or more RLs for six compounds (1,2-dibromo-3-chloropropane, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and N-nitroso-di-n-propylamine) exceeded the residential soil RSLs. For these compounds, the RSL is based on cancer risk. If the maximum RL is divided by the RSL, and the quotient is multiplied by 1E-06 to yield a screening level cancer risk estimate, the cumulative risk associated with these analytes is 4E-05. If all of these compounds were actually present in the soil at their maximum RLs, then the cumulative cancer risk to the future resident could have been under estimated by 4E-05.

Screening values were not available for several analytes. The absence of toxicity information for these chemicals could under estimate potential risks if the analytes were indeed present in the soil.

5.4.2.2 Sediment

Comparison of the RLs for analytes not detected in the sediment samples to the residential soil RSLs is presented in Table 5.30. One or more RLs for 1,2-dibromo-3-chloropropane, N-nitroso-di-n-propylamine, dibenzo(a,h)anthracene, and benzo(a)anthracene were greater than the RSLs. For these compounds, the RSL is based on cancer risk. If the maximum RL is divided by the RSL, and the quotient is multiplied by 1E-06 to yield a screening level cancer risk estimate, the cumulative risk associated with these analytes is 4E-05. If all of these compounds were actually present in the sediment at their maximum RLs, then the cumulative cancer risk to the future resident could have been under estimated by 4E-05.

5.4.2.3 Groundwater

The RLs for analytes not detected in any groundwater samples are compared to the tap water RSLs in Table 5.31.

For 48 analytes, the maximum RLs were greater than the tap water RSLs. As indicated by the screening level cancer risk and hazard quotient calculations presented in Table 5.31, presence of the analytes at a concentration equivalent to the maximum RLs would significantly under estimate the potential health effects. It should be noted that the maximum RLs apply to a relatively small number of samples. The majority of the samples were characterized by RLs on the lower end of the range. A screening level risk calculation based on the maximum RLs resulted in a cancer risk of 6E-03 and an HI of 3. The majority of this risk was due to the maximum RLs for benzo(a)anthracene (2E-04); benzo(a)pyrene (2E-03); benzo(b)fluoranthene (2E-04); bis(2-chloroethyl)ether (4E-04); dibenz(a,h)anthracene (2E-03); hexachlorobenzene (1E-04); indeno(1,2,3-cd)pyrene (2E-04); and N-nitroso-di-n-propylamine (5E-04). The non-cancer hazard was due to 4,6-dinitro-2-methylphenol (3.4). The analytical sensitivity achieved for these nine chemicals could substantially under estimate potential cancer risks and non-cancer hazard if the analytes were actually present in the groundwater. However, since most of these compounds would tend to sorb to soil thereby reducing potential leaching, the uncertainty associated with these compounds and their associated toxicity, the effects of RLs is minimized.

Screening values were not available for several analytes. The absence of toxicity information for these chemicals could under estimate potential risks if the analytes were indeed present in the groundwater.

5.4.2.4 Soil Gas

The RLs of analytes not detected in any subslab samples were compared to the residential air RSLs. This comparison is presented in Table 5.32.

The RLs for 1,1,2,2-tetrachloroethane; 1,1,2-trichloroethane; 1,1-dichloroethane; 1,2,4-trichlorobenzene; 1,2-dibromoethane; 1,2-dichloroethane; 1,2-dichloropropane; bromodichloromethane; bromoform; cis-1,3-dichloropropene; dibromochloromethane; ethylbenzene; hexachlorobutadiene; naphthalene; trans-1,3-dichloropropene; and vinyl chloride were greater than their corresponding RSLs. To assess the potential contributions to health effects if the non-detected analytes were present at their maximum RLs, a screening level risk calculation was performed. For all but one non-detect analytes with RSL exceedances, the RSLs were based on cancer risk. Accordingly, the RL was divided by the RSL, and the quotient was multiplied by 1E-06. The resulting screening level cancer risks were summed. The potential cancer risk estimated for the maximum adjusted RLs was 1E-03. Of this total risk, the vast majority, 9E-04, was due to the maximum adjusted RL for 1,2-dibromoethane. The primary historical use of 1,2-dibromoethane was as an additive in leaded gasoline. Based on historical uses of 1,2-dibromoethane, it is unlikely that this compound would have been released at the site. A screening level risk calculation based on the maximum RLs resulted in an HI of 1, which is equal to the target value. While the analytical sensitivity could have under estimated potential risks, this uncertainty is mitigated by the observation that the compound which had the greatest risk associated with its adjusted RL was unlikely to have been released at the site.

Screening values were not available for 1,2,3-trichlorobenzene; 1,3,5-trimethylbenzene; 1,3-dichlorobenzene; cis-1,2-dichloroethene; and heptanes. The absence of inhalation toxicity information for these compounds could under estimate potential health effects.

5.4.3 Uncertainty from Exposure Assessment

The exposure assessment identified potential exposure routes and calculated chemical intakes for each chemical and identified appropriate receptor groups. The uncertainty associated with these aspects of the exposure assessment is discussed below.

5.4.3.1 Identification of Potential Exposure Routes

It was assumed that the only receptors that could be exposed to contaminated soil were on-property receptors, and that the off-property resident would have no contact with the contaminated soil associated with the site. This assumption could under estimate potential risks to off-property receptors. Surficial contamination resulting from activities at the grain storage facility appears to be negligible (See RI Section 5.0). Surface soil data shows very few detections and no COPCs. The flat topography minimizes the potential for overland migration of eroded surface soil. The lack of contaminant migration via this pathway is supported by the sediment data. The primary contaminants associated with historical operations were not detected in the sediment samples. For these reasons, the assumption that the off-property resident would be exposed only to groundwater contaminants, and not to on-site contaminated soil, contributes little to the overall uncertainty.

The HHRA assumed that the off-property resident currently uses the contaminated groundwater as a potable water source. However, because of actions taken by EPA to provide alternative water supplies and install point-of-use treatment systems, it is unlikely that the off-property groundwater is currently used as a potable water source. These actions include extending municipal water supply lines and connecting residents in the off-property areas affected by the plume. Residents and businesses not connected to municipal water have had filtration systems installed or are provided bottled water. The private wells are sampled regularly. Forty-one private wells in the investigation area were found to be affected by contamination originating at the Garvey Elevator Superfund Site. The current status of the forty-one wells impacted by the Garvey site is discussed in Section 2.1.1 of the RI Report. Exposures via these wells are expected to be less than or equal to those associated with the potable use scenario. Therefore, it is expected that evaluation of the potable water scenario for the off-property resident would over estimate potential current off-property exposure. In the absence of institutional controls or other enforceable remedy, future off-property residents could revert to use of the contaminated groundwater as a potable water source. The potable water scenario evaluated in the HHRA adequately addresses this potential future situation.

5.4.3.2 Calculation of Chemical Intake

To calculate chemical intake, it is necessary to assume values for the exposure parameters (ingestion rate, exposure frequency, exposure duration, etc) and to estimate the COPC concentrations to which the receptors will be exposed. Both of these aspects of the exposure assessment contribute uncertainty to the overall HHRA.

When evaluating exposure, probable scenarios are developed to estimate conditions and duration of human contact with COPCs. Exposure scenarios are based on observed or assumed current or potential activities of human populations which could result in direct exposure. Exposure assumptions for the resident, indoor industrial worker, outdoor industrial worker, and construction worker were based on default values presented in EPA guidance documents that are derived based on health-protective and conservative assumptions. Although there is uncertainty in the default values developed by EPA, EPA developed those values with the goal of providing numbers that would reasonably bound potential risk. This approach, which is intentionally health protective, is sometimes termed a reasonable maximum exposure: one that may be at the high end of a range of exposures but still possible. While it is possible for the default assumptions to under estimate potential exposure for individual receptors, it is expected that the potential for underestimation of risk is low.

For the adolescent trespasser and the adult farmer, the HHRA relied on site-specific exposure assumptions based on professional judgment. The goal was to select values that would be reasonably conservative. Depending on the extent to which adolescents actually use the site or the farmer uses the impacted groundwater, the exposure assumptions for this receptor may under estimate or over estimate potential risks.

The average daily doses to which the receptors would be exposed were developed from the validated analytical results. It was assumed the contaminant levels would remain constant throughout the exposure period with no reduction due to natural attenuation or remedial activities which represents a likely overestimate of total dose received over the exposure period. Based on current operation of a soil vapor extraction system and a groundwater extraction and treatment system, this assumption likely over estimates the future exposure.

Some data points were excluded from the risk assessment because they were rejected during the data validation process. Depending on the number of data points rejected, the rejections could cause data gaps that may result in either an underestimation or an overestimation of potential exposure concentrations. A total of 13 data points were rejected out of the 22,182 points generated. Completeness is greater than 99.9%. See Section 4.6.4 of the RI for details. Based on the low number of rejected data points as compared to the overall data set, the data gaps left by the R-qualified data likely contributed little to the overall uncertainty.

For a given medium, some of the COPCs were not detected in all of the samples. A non-detect result does not mean the COPC is completely absent, but that the possible COPC concentration ranges between zero and the reporting limit. The ProUCL software was used to generate the statistical summaries and point estimate EPCs. In general, the exposure point concentration is intended to be an upper bounding estimate, such as a 95 percent UCL, of the mean or average concentration. When a data set encompasses multiple non-detect results, it is difficult for statistical methods to provide an accurate estimate of the UCL. To address this issue, the maximum detected concentration was used as the exposure point concentration if the data set had fewer than six detections, or if the data set had a very high percentage of non-detect results. The maximum concentration was used as the EPC for all groundwater, sediment, and subslab soil gas COPCs. Use of the maximum concentrations to estimate intake over the entire exposure duration could over estimate potential exposures of receptors and the associated health risks.

The indoor air data were not used to evaluate potential risks to the current industrial worker because comparison of the indoor air results to the subslab soil gas data indicated that the site contaminants currently are not migrating across the foundation. The indoor air data suggest that the current indoor worker may be potentially exposed to volatile chemicals associated with ongoing building operations. The HHRA did not consider the exposure of current indoor workers to their occupational hazards. As noted above, the data indicate that volatile site contaminants are not intruding into the existing building. This apparent lack of migration is likely due to operation of the SVE system. It is expected that continued operation of the SVE system will decrease VOC concentrations in the subsurface soil and the soil gas, thereby decreasing the potential for exposure via the vapor intrusion pathway. Based on this expectation, use of the current subslab soil gas data to estimate future exposure is conservative.

To estimate the concentration of vapors that could accumulate inside the building if the SVE system was not operating, an attenuation factor of 0.1 was applied to the soil gas concentrations. Depending on the cracks in the building foundation, and operation of the ventilation system, this attenuation factor could under estimate or over estimate potential migration of vapors across the foundation and accumulation in the building.

5.4.4 Uncertainty from Toxicity Assessment

All toxicity values were obtained from peer-reviewed sources in accordance with EPA guidance and accepted hierarchy of data preference. For some chemical substances, there was little or no toxicity information available and, for many chemicals, the available data were from animal studies. Toxicity values derived solely from animal studies usually have more uncertainty than those derived from epidemiological data. This uncertainty is characterized in the application of the appropriate uncertainty factors as part of the development of the RfDs or RfCs. The relative strength of the available toxicological information generates some uncertainty in the evaluation of possible adverse health effects and the exposure level at which they may occur. To account for this uncertainty, the toxicity values are calculated in a conservative manner. While new studies may indicate that existing toxicity values are not sufficiently protective, it is expected that the general approach to toxicity assessment would tend to err on the side of over-estimating potential risks.

The lack of numerical toxicity values for dermal exposure, which have not been developed by EPA or any other regulatory body, contribute to the overall uncertainty associated with dermal exposure to PAHs. This is a significant gap in the risk assessment of all chemicals through the dermal route of exposure. To quantify risk from dermal exposure, route to route extrapolation of the oral toxicity value to a dermal toxicity value was used as recommended by EPA. Because of potential differences in patterns of distribution, metabolism, and excretion between oral and dermal routes of exposure, use of oral toxicity values for dermal exposure may over or under estimate risk, depending on the absorption and distribution characteristics of the chemical.

5.4.5 Uncertainty from Risk Characterization

Each of the evaluated complete pathways includes exposure to more than one chemical, in many cases a mixture of several chemicals. Calculating risks from exposure to mixtures of chemicals involves assumptions that reflect intrinsic uncertainty including the effects of various mechanisms of action on the overall risk. A major contributor to the overall uncertainty associated with calculating the risks of exposure to mixtures of chemicals is determining whether the overall risk represents an additive, antagonistic or synergistic mechanism. The risk characterization assumed that exposure to multiple chemicals can be adequately evaluated through summing the hazard quotients for those chemicals that have a similar mode of action, and adding all the cancer risks. This assumption of additivity contributes uncertainty to the analysis. Due to a lack of data concerning the impacts associated with exposure to multiple chemicals, it is not known if the assumption of additivity would under estimate or over estimate potential health threats.

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TABLE(S)

Table 5.1
CALCULATION OF CANCER RISKS
Sediment, Current/Future Indoor Industrial Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site sediment
Receptor Population: Indoor (Industrial) Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
		Value	Units	Intake (Cancer)		Cancer Slope Factor or Inhalation Unit Risk		Cancer Risk
				Value	Units	Value	Units	
Ingestion								
	Benzo(a)pyrene	2.3E-01	mg/kg	4.0E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	2.9E-07
	Benzo(b)fluoranthene	2.3E-01	mg/kg	4.0E-08	mg/kg-day	7.3E-01	$(mg/kg\text{-}day)^{-1}$	2.9E-08
Ingestion Route Total								3.E-07
Inhalation								
	Benzo(a)pyrene	1.7E-10	mg/m^3	1.4E-11	mg/m^3	1.1E+00	$(mg/m^3)^{-1}$	1.5E-11
	Benzo(b)fluoranthene	1.7E-10	mg/m^3	1.4E-11	mg/m^3	1.1E-01	$(mg/m^3)^{-1}$	1.5E-12
Inhalation Route Total								2.E-11
Total of Receptor Hazards Across All Media								3.E-07

TABLE 5.2
CALCULATION OF NON-CANCER HAZARDS
Subslab Soil Gas, Current/Future Indoor Industrial Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Medium: Subslab Soil Gas
Exposure Medium: Soil Gas
Exposure Point: Air
Receptor Population: Indoor (Industrial) Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Intake (Non-Cancer)		Reference Dose or Reference Concentration		Hazard Quotient
		Value	Units	Value	Units	Value	Units	
Inhalation								
	Chloroform	9.3E-03	mg/m^3	2.1E-03	mg/m^3	9.8E-02	mg/m^3	0.02
	Tetrachloroethene	1.4E-01	mg/m^3	3.2E-02	mg/m^3	2.7E-01	mg/m^3	0.1
Inhalation Route Total								0.1
Total of Receptor Hazards Across All Media								0.1

Table 5.3
CALCULATION OF CANCER RISKS
Sublab Soil Gas, Current/Future Indoor Industrial Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Medium: Subslab Soil Gas
Exposure Medium: Soil Gas
Exposure Point: Air
Receptor Population: Indoor (Industrial) Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
		Value	Units	Intake (Cancer)		Cancer Slope Factor or Inhalation Unit Risk		Cancer Risk
				Value	Units	Value	Units	
Inhalation								
	Chloroform	9.30E-03	mg/m^3	7.6E-04	mg/m^3	2.3E-02	$(mg/m^3)^{-1}$	1.7E-05
	Tetrachloroethene	1.40E-01	mg/m^3	1.1E-02	mg/m^3	5.9E-03	$(mg/m^3)^{-1}$	6.7E-05
Inhalation Route Total								8.E-05
Total of Receptor Hazards Across All Media								8.E-05

Table 5.4
CALCULATION OF CANCER RISKS
Sediment, Current/Future Outdoor Industrial Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Outdoor (Industrial) Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
		Value	Units	Intake (Cancer)		Cancer Slope Factor or Inhalation Unit Risk		Cancer Risk
				Value	Units	Value	Units	
Ingestion								
	Benzo(a)pyrene	2.3E-01	mg/kg	7.2E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	5.3E-07
	Benzo(b)fluoranthene	2.3E-01	mg/kg	7.2E-08	mg/kg-day	7.3E-01	$(mg/kg\text{-}day)^{-1}$	5.3E-08
Ingestion Route Total								6.E-07
Dermal Absorption								
	Benzo(a)pyrene	2.3E-01	mg/kg	6.2E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	4.5E-07
	Benzo(b)fluoranthene	2.3E-01	mg/kg	6.2E-08	mg/kg-day	7.3E-01	$(mg/kg\text{-}day)^{-1}$	4.5E-08
Dermal Absorption Route Total								5.E-07
Inhalation								
	Benzo(a)pyrene	1.7E-10	mg/m^3	1.2E-11	mg/m^3	1.1E+00	$(mg/m^3)^{-1}$	1.4E-11
	Benzo(b)fluoranthene	1.7E-10	mg/m^3	1.2E-11	mg/m^3	1.1E-01	$(mg/m^3)^{-1}$	1.4E-12
Inhalation Route Total								2.E-11
							Total of Receptor Hazards Across All Media	1.E-06

Table 5.5
CALCULATION OF CANCER RISKS
Sediment, Future Construction Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site Sediment
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
		Value	Units	Intake (Cancer)		Cancer Slope Factor or Inhalation Unit Risk		Cancer Risk
				Value	Units	Value	Units	
Ingestion	Benzo(a)pyrene	2.3E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	7.7E-08
Exposure Route Total								8.E-08
Dermal Absorption	Benzo(a)pyrene	2.3E-01	mg/kg	4.1E-09	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	3.0E-08
Exposure Route Total								3.E-08
Inhalation	Benzo(a)pyrene	3.0E-07	mg/m^3	9.7E-10	mg/m^3	1.1E+00	$(mg/m^3)^{-1}$	1.1E-09
Exposure Route Total								1.E-09
							Total of Receptor Hazards Across All Media	1.E-07

Table 5.6
CALCULATION OF CANCER RISKS
Sediment, Future On-Property Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site sediment
Receptor Population: Resident
Receptor Age: Child/Adult, age-adjusted

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
		Value	Units	Intake (Cancer)		Cancer Slope Factor or Inhalation Unit Risk		Cancer Risk
				Value	Units	Value	Units	
Ingestion								
	Benzo(a)pyrene	2.3E-01	mg/kg	See Table for Mutagenic Risks				1.E-05
	Benzo(b)fluoranthene	2.3E-01	mg/kg	See Table for Mutagenic Risks				1.E-06
Ingestion Route Total								1.E-05
Dermal Absorption								
	Benzo(a)pyrene	2.3E-01	mg/kg	See Table for Mutagenic Risks				4.E-06
	Benzo(b)fluoranthene	2.3E-01	mg/kg	See Table for Mutagenic Risks				4.E-07
Dermal Absorption Route Total								5.E-06
Inhalation								
	Benzo(a)pyrene	1.7E-10	mg/m^3	See Table for Mutagenic Risks				2.E-10
	Benzo(b)fluoranthene	1.7E-10	mg/m^3	See Table for Mutagenic Risks				2.E-11
Inhalation Route Total								2.E-10
Total of Receptor Hazards Across All Media								2.E-05

Table 5.6a
CALCULATION OF CANCER RISKS - AGE-DEPENDENT CALCULATIONS
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult Age-adjusted

Exposure Route	Chemical of Potential Concern	xposure Point Concentratio		Cancer Risk Calculations						
				Intake (Cancer)		Cancer Slope Factor		Age-Dependent Adjustment Factors (unitless)	Age-Dependent Cancer Risk	Cancer Risk
		Value	Units	Value	Units	Value	Units			
Benzo(a)pyrene	Ingestion									1.1E-05
	Age 0 -2 years	2.3E-01	mg/kg	8.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	10	6.1E-06	
	Age 2 - 6 years	2.3E-01	mg/kg	1.7E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	3	3.7E-06	
	Age 6 - 16 years	2.3E-01	mg/kg	4.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	3	9.9E-07	
	Age 16 - 30 years	2.3E-01	mg/kg	6.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1	4.6E-07	
	Dermal Absorption									4.3E-06
	Age 0 -2 years	2.3E-01	mg/kg	3.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	10	2.2E-06	
	Age 2 - 6 years	2.3E-01	mg/kg	6.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	3	1.3E-06	
	Age 6 - 16 years	2.3E-01	mg/kg	2.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	3	5.1E-07	
	Age 16 - 30 years	2.3E-01	mg/kg	3.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1	2.4E-07	
	Inhalation									1.9E-10
	Age 0 -2 years	1.7E-10	mg/m3	4.6E-12	mg/m3	1.1E+00	$(mg/m^3)^{-1}$	10	5.1E-11	
	Age 2 - 6 years	1.7E-10	mg/m3	9.3E-12	mg/m3	1.1E+00	$(mg/m^3)^{-1}$	3	3.1E-11	
	Age 6 - 16 years	1.7E-10	mg/m3	2.3E-11	mg/m3	1.1E+00	$(mg/m^3)^{-1}$	3	7.6E-11	
	Age 16 - 30 years	1.7E-10	mg/m3	3.2E-11	mg/m3	1.1E+00	$(mg/m^3)^{-1}$	1	3.6E-11	
Benzo(b)fluoranthene	Ingestion									1.1E-06
	Age 0 -2 years	2.3E-01	mg/kg	8.4E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	10	6.1E-07	
	Age 2 - 6 years	2.3E-01	mg/kg	1.7E-07	mg/kg-day	7.3E-01	(mg/kg-day)-1	3	3.7E-07	
	Age 6 - 16 years	2.3E-01	mg/kg	4.5E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	3	9.9E-08	
	Age 16 - 30 years	2.3E-01	mg/kg	6.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	1	4.6E-08	
	Dermal Absorption									4.3E-07
	Age 0 -2 years	2.3E-01	mg/kg	3.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	10	2.2E-07	
	Age 2 - 6 years	2.3E-01	mg/kg	6.1E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	3	1.3E-07	
	Age 6 - 16 years	2.3E-01	mg/kg	2.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	3	5.1E-08	
	Age 16 - 30 years	2.3E-01	mg/kg	3.3E-08	mg/kg-day	7.3E-01	(mg/kg-day)-1	1	2.4E-08	
	Inhalation									1.9E-11
	Age 0 -2 years	1.7E-10	mg/m3	4.6E-12	mg/m3	1.1E-01	$(mg/m^3)^{-1}$	10	5.1E-12	
	Age 2 - 6 years	1.7E-10	mg/m3	9.3E-12	mg/m3	1.1E-01	$(mg/m^3)^{-1}$	3	3.1E-12	
	Age 6 - 16 years	1.7E-10	mg/m3	2.3E-11	mg/m3	1.1E-01	$(mg/m^3)^{-1}$	3	7.6E-12	
	Age 16 - 30 years	1.7E-10	mg/m3	3.2E-11	mg/m3	1.1E-01	$(mg/m^3)^{-1}$	1	3.6E-12	

TABLE 5.7
CALCULATION OF NON-CANCER HAZARD
Subslab Soil Gas, Future On-Property Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Subslab Soil Gas
Exposure Medium: Soil Gas
Exposure Point: Indoor Air
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Intake (Non-Cancer)		Reference Dose or Reference Concentration		Hazard Quotient
		Value	Units	Value	Units	Value	Units	
Inhalation								
	Chloroform	9.30E-03	mg/m^3	8.9E-03	mg/m^3	9.8E-02	mg/m^3	0.09
	Tetrachloroethene	1.40E-01	mg/m^3	1.3E-01	mg/m^3	2.7E-01	mg/m^3	0.5
	Trichloroethene	4.00E-03	mg/m^3	3.8E-03	mg/m^3	NV	mg/m^3	NV
Inhalation Route Total								0.6
Total of Receptor Hazards Across All Media								0.6

TABLE 5.8
CALCULATION OF NON-CANCER HAZARD
Subslab Soil Gas, Future On-Property Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Medium: Subslab Soil Gas
Exposure Medium: Soil Gas
Exposure Point: Indoor Air
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Intake (Non-Cancer)		Reference Dose or Reference Concentration		Hazard Quotient
		Value	Units	Value	Units	Value	Units	
Inhalation								
	Chloroform	9.30E-03	mg/m^3	8.9E-03	mg/m^3	9.8E-02	mg/m^3	0.09
	Tetrachloroethene	1.40E-01	mg/m^3	1.3E-01	mg/m^3	2.7E-01	mg/m^3	0.5
	Trichloroethene	4.00E-03	mg/m^3	3.8E-03	mg/m^3	NV	mg/m^3	NV
Inhalation Route Total								0.6
							Total of Receptor Hazards Across All Media	0.6

Table 5.9
CALCULATION OF CANCER RISKS
Subslab Soil Gas, Future On-Property Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult Age-adjusted

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
				Intake (Cancer)		Cancer Slope Factor		Cancer Risk
		Value	Units	Value	Units	Value	Units	
Inhalation								
	Chloroform	9.3E-03	mg/m3	3.8E-03	mg/m3	2.3E-02	$(mg/m^3)^{-1}$	8.8E-05
	Tetrachloroethene	1.4E-01	mg/m3	5.8E-02	mg/m3	5.9E-03	$(mg/m^3)^{-1}$	3.4E-04
	Trichloroethene	4.0E-03	mg/m3	1.6E-03	mg/m3	2.0E-03	$(mg/m^3)^{-1}$	3.3E-06
Inhalation Route Total								4.E-04

Table 5.10
CALCULATION OF CANCER RISKS
Sediment, Current/Future Trespasser
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Site sediment
Receptor Population: Site Trespasser
Receptor Age: Adolescent

Exposure Route	Chemical of Potential Concern	Exposure Point Concentration		Cancer Risk Calculations				
		Value	Units	Intake (Cancer)		Cancer Slope Factor or Inhalation Unit Risk		Cancer Risk
				Value	Units	Value	Units	
Ingestion								
	Benzo(a)pyrene	2.3E-01	mg/kg	4.7E-09	mg/kg-day	2.2E+01	$(mg/kg\text{-}day)^{-1}$	1.0E-07
	Benzo(b)fluoranthene	2.3E-01	mg/kg	4.7E-09	mg/kg-day	2.2E+00	$(mg/kg\text{-}day)^{-1}$	1.0E-08
Ingestion Route Total								1.E-07
Dermal Absorption								
	Benzo(a)pyrene	2.3E-01	mg/kg	4.0E-09	mg/kg-day	2.2E+01	$(mg/kg\text{-}day)^{-1}$	8.7E-08
	Benzo(b)fluoranthene	2.3E-01	mg/kg	4.0E-09	mg/kg-day	2.2E+00	$(mg/kg\text{-}day)^{-1}$	8.7E-09
Dermal Absorption Route Total								1.E-07
Inhalation								
	Benzo(a)pyrene	1.7E-10	mg/m^3	1.3E-13	mg/m^3	3.3E+00	$(mg/m^3)^{-1}$	4.3E-13
	Benzo(b)fluoranthene	1.7E-10	mg/m^3	1.3E-13	mg/m^3	3.3E-01	$(mg/m^3)^{-1}$	4.3E-14
Inhalation Route Total								5.E-13
							Total of Receptor Hazards Across All Media	2.E-07

Table 5.11
CALCULATION OF NON-CANCER HAZARDS
Groundwater, Current Off-Property Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe:	Current
Receptor Population:	Off-Property Resident
Receptor Age:	Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-cancer Risk Calculations				
					Value	Units	Intake		RfD / RfC		Hazard Quotient
							Value	Units	Value	Units	
Groundwater	Water	Tap	Ingestion								
				1,2-Dichloroethane	3.0E-03	mg/L	1.9E-04	mg/kg-day	2.0E-02	mg/kg-day	0.01
				Carbon Tetrachloride	9.6E-01	mg/L	6.1E-02	mg/kg-day	4.0E-03	mg/kg-day	15
				Chloroform	1.4E-01	mg/L	8.9E-03	mg/kg-day	1.0E-02	mg/kg-day	0.9
			Exp. Route Total								16
Groundwater	Water	Bath	Dermal contact								
				1,2-Dichloroethane	3.0E-03	mg/L	9.4E-06	mg/kg-day	2.0E-02	mg/kg-day	0.0005
				Carbon Tetrachloride	9.6E-01	mg/L	1.6E-02	mg/kg-day	4.0E-03	mg/kg-day	4
				Chloroform	1.4E-01	mg/L	7.9E-04	mg/kg-day	1.0E-02	mg/kg-day	0.08
			Exp. Route Total								4
			Inhalation								
				1,2-Dichloroethane	3.0E-03	mg/L	1.1E-03	mg/m^3	2.4E+00	mg/m^3	0.0004
				Carbon Tetrachloride	9.6E-01	mg/L	3.5E-01	mg/m^3	1.0E-01	mg/m^3	3
				Chloroform	1.4E-01	mg/L	5.0E-02	mg/m^3	9.8E-02	mg/m^3	0.5
			Exp. Route Total								4
	Exposure Medium Total										24

Table 5.12
CALCULATION OF NON-CANCER HAZARDS
Groundwater, Current Off-Property Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off-Property Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Non-cancer Risk Calculations: Intake Value	Intake Units	RfD / RfC Value	RfD / RfC Units	Hazard Quotient
Groundwater	Water	Tap	Ingestion								
				1,2-Dichloroethane	3.0E-03	mg/L	6.6E-05	mg/kg-day	2.0E-02	mg/kg-day	0.003
				Carbon Tetrachloride	9.6E-01	mg/L	2.1E-02	mg/kg-day	4.0E-03	mg/kg-day	5
				Chloroform	1.4E-01	mg/L	3.1E-03	mg/kg-day	1.0E-02	mg/kg-day	0.3
			Exp. Route Total								6
Groundwater	Water	Shower	Dermal contact								
				1,2-Dichloroethane	3.0E-03	mg/L	4.4E-06	mg/kg-day	2.0E-02	mg/kg-day	0.0002
				Carbon Tetrachloride	9.6E-01	mg/L	7.4E-03	mg/kg-day	4.0E-03	mg/kg-day	2
				Chloroform	1.4E-01	mg/L	3.7E-04	mg/kg-day	1.0E-02	mg/kg-day	0.04
			Exp. Route Total								2
			Inhalation								
				1,2-Dichloroethane	3.0E-03	mg/L	1.1E-03	mg/m^3	2.4E+00	mg/m^3	0.0004
				Carbon Tetrachloride	9.6E-01	mg/L	3.5E-01	mg/m^3	1.0E-01	mg/m^3	3
				Chloroform	1.4E-01	mg/L	5.0E-02	mg/m^3	9.8E-02	mg/m^3	0.5
			Exp. Route Total								4
	Exposure Medium Total										11

Table 5.13
CALCULATION OF CANCER RISKS
Groundwater, Current Off-Property Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off-Property Resident
Receptor Age: Age-Adjusted Adult/Child Combined

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Groundwater	Water	Tap	Ingestion								
				1,2-Dichloroethane	3.0E-03	mg/L	4.5E-05	mg/kg-day	9.1E-02	$(mg/kg\text{-}day)^{-1}$	4.E-06
				Carbon Tetrachloride	9.6E-01	mg/L	1.4E-02	mg/kg-day	7.0E-02	$(mg/kg\text{-}day)^{-1}$	1.E-03
				Chloroform	1.4E-01	mg/L	2.1E-03	mg/kg-day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	6.E-05
			Exp. Route Total								1E-03
Groundwater	Water	Shower	Dermal contact								
				1,2-Dichloroethane	3.0E-03	mg/L	2.2E-06	mg/kg-day	9.1E-02	$(mg/kg\text{-}day)^{-1}$	2.E-07
				Carbon Tetrachloride	9.6E-01	mg/L	4.2E-03	mg/kg-day	7.0E-02	$(mg/kg\text{-}day)^{-1}$	3.E-04
				Chloroform	1.4E-01	mg/L	1.9E-04	mg/kg-day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	6.E-06
			Exp. Route Total								3.E-04
			Inhalation								
				1,2-Dichloroethane	3.0E-03	mg/L	4.6E-04	mg/m^3	2.6E-05	$(ug/m^3)^{-1}$	1E-08
				Carbon Tetrachloride	9.6E-01	mg/L	1.5E-01	mg/m^3	6.0E-06	$(ug/m^3)^{-1}$	9E-07
				Chloroform	1.4E-01	mg/L	2.2E-02	mg/m^3	2.3E-05	$(ug/m^3)^{-1}$	5E-07
			Exp. Route Total								1E-06
	Exposure Medium Total										1.E-03

Table 5.14
CALCULATION OF NON-CANCER HAZARDS
Groundwater, Current Off-Property Adult Farmer
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off-Property Resident
Receptor Age: Adult Farmer

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-cancer Risk Calculations				
					Value	Units	Intake		RfD		Hazard Quotient
							Value	Units	Value	Units	
Groundwater	Water	Tap	Ingestion								
				1,2-Dichloroethane	3.0E-03	mg/L	3.3E-07	mg/kg-day	2.0E-02	mg/kg-day	0.00002
				Carbon Tetrachloride	9.6E-01	mg/L	1.1E-04	mg/kg-day	4.0E-03	mg/kg-day	0.026
				Chloroform	1.4E-01	mg/L	1.5E-05	mg/kg-day	1.0E-02	mg/kg-day	0.0015
			Exp. Route Total								0.028
Groundwater	Water	Irrigation	Dermal contact								
				1,2-Dichloroethane	3.0E-03	mg/L	6.2E-09	mg/kg-day	2.0E-02	mg/kg-day	0.0000003
				Carbon Tetrachloride	9.6E-01	mg/L	1.1E-05	mg/kg-day	4.0E-03	mg/kg-day	0.0027
				Chloroform	1.4E-01	mg/L	5.4E-07	mg/kg-day	1.0E-02	mg/kg-day	0.000054
			Exp. Route Total								0.0028
	Exposure Medium Total										0.031

Table 5.15
CALCULATION OF CANCER RISKS
Groundwater, Current Off-Property Adult Farmer
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off-Site Resident
Receptor Age: Adult Farmer

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Groundwater	Water	Tap	Ingestion								
				1,2-Dichloroethane	3.0E-03	mg/L	3.3E-07	mg/kg-day	9.1E-02	$(mg/kg\text{-}day)^{-1}$	3.E-08
				Carbon Tetrachloride	9.6E-01	mg/L	1.1E-04	mg/kg-day	7.0E-02	$(mg/kg\text{-}day)^{-1}$	7.E-06
				Chloroform	1.4E-01	mg/L	1.5E-05	mg/kg-day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	5.E-07
			Exp. Route Total								7.9E-06
Groundwater	Water	Irrigation	Dermal contact								
				1,2-Dichloroethane	3.0E-03	mg/L	6.2E-09	mg/kg-day	9.1E-02	$(mg/kg\text{-}day)^{-1}$	6.E-10
				Carbon Tetrachloride	9.6E-01	mg/L	1.1E-05	mg/kg-day	7.0E-02	$(mg/kg\text{-}day)^{-1}$	8.E-07
				Chloroform	1.4E-01	mg/L	5.4E-07	mg/kg-day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	2.E-08
			Exp. Route Total								8.E-07
	Exposure Medium Total										9.E-06

Table 5.16
CALCULATION OF NON-CANCER HAZARDS
Groundwater, Future On-Property Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: On-Property Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-cancer Risk Calculations				
							Intake		RfD / RfC		
					Value	Units	Value	Units	Value	Units	Hazard Quotient
Groundwater	Water	Tap	Ingestion								
				Benzene	4.0E-03	mg/L	2.6E-04	mg/kg-day	4.0E-03	mg/kg-day	0.06
				Carbon Tetrachloride	1.3E+00	mg/L	8.3E-02	mg/kg-day	4.0E-03	mg/kg-day	21
				Chloroform	1.8E-02	mg/L	1.2E-03	mg/kg-day	1.0E-02	mg/kg-day	0.1
				Trichloroethene	7.3E-03	mg/L	4.7E-04	mg/kg-day	3.0E-04	mg/kg-day	2
			Exp. Route Total								23
Groundwater	Water	Bath	Dermal contact								
				Benzene	4.0E-03	mg/L	3.9E-05	mg/kg-day	4.0E-03	mg/kg-day	0.01
				Carbon Tetrachloride	1.3E+00	mg/L	2.1E-02	mg/kg-day	4.0E-03	mg/kg-day	5
				Chloroform	1.8E-02	mg/L	1.0E-04	mg/kg-day	1.0E-02	mg/kg-day	0.01
				Trichloroethene	7.3E-03	mg/L	7.8E-05	mg/kg-day	3.0E-04	mg/kg-day	0.3
			Exp. Route Total								6
			Inhalation								
				Benzene	4.0E-03	mg/L	1.4E-03	mg/m^3	3.0E-02	mg/m^3	0.05
				Carbon Tetrachloride	1.3E+00	mg/L	4.7E-01	mg/m^3	1.0E-01	mg/m^3	5
				Chloroform	1.8E-02	mg/L	6.5E-03	mg/m^3	9.8E-02	mg/m^3	0.07
				Trichloroethene	7.3E-03	mg/L	2.6E-03	mg/m^3	NA	mg/m^3	NA
			Exp. Route Total								5
	Exposure Medium Total										33

Table 5.17
CALCULATION OF NON-CANCER HAZARDS
Groundwater, Future On-Property Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: On-Property Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Intake Value	Intake Units	RfD Value	RfD Units	Hazard Quotient
Groundwater	Water	Tap	Ingestion								
				Benzene	4.0E-03	mg/L	8.8E-05	mg/kg-day	4.0E-03	mg/kg-day	0.02
				Carbon Tetrachloride	1.3E+00	mg/L	2.8E-02	mg/kg-day	4.0E-03	mg/kg-day	7
				Chloroform	1.8E-02	mg/L	3.9E-04	mg/kg-day	1.0E-02	mg/kg-day	0.04
				Trichloroethene	7.3E-03	mg/L	1.6E-04	mg/kg-day	3.0E-04	mg/kg-day	0.5
			Exp. Route Total								8
Groundwater	Water	Bath	Dermal contact								
				Benzene	4.0E-03	mg/L	1.8E-05	mg/kg-day	4.0E-03	mg/kg-day	0.005
				Carbon Tetrachloride	1.3E+00	mg/L	1.0E-02	mg/kg-day	4.0E-03	mg/kg-day	3
				Chloroform	1.8E-02	mg/L	4.7E-05	mg/kg-day	1.0E-02	mg/kg-day	0.005
				Trichloroethene	7.3E-03	mg/L	3.6E-05	mg/kg-day	3.0E-04	mg/kg-day	0.1
			Exp. Route Total								3
			Inhalation								
				Benzene	4.0E-03	mg/L	1.4E-03	mg/m^3	3.0E-02	mg/m^3	0.05
				Carbon Tetrachloride	1.3E+00	mg/L	4.7E-01	mg/m^3	1.0E-01	mg/m^3	5
				Chloroform	1.8E-02	mg/L	6.5E-03	mg/m^3	9.8E-02	mg/m^3	0.07
				Trichloroethene	7.3E-03	mg/L	2.6E-03	mg/m^3	NA	mg/m^3	NA
			Exp. Route Total								5
	Exposure Medium Total										15

Non-cancer Risk Calculations (Intake, RfD, Hazard Quotient columns)

Table 5.18
CALCULATION OF CANCER RISKS
Groundwater, Future On-Property Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: On-Property Resident
Receptor Age: Age-Adjusted Resident

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Intake Value	Intake Units	CSF/Unit Risk Value	CSF/Unit Risk Units	Cancer Risk
Groundwater	Water	Tap	Ingestion								
				Benzene	4.0E-03	mg/L	5.9E-05	mg/kg-day	5.5E-02	$(mg/kg\text{-}day)^{-1}$	3.E-06
				Carbon Tetrachloride	1.3E+00	mg/L	1.9E-02	mg/kg-day	7.0E-02	$(mg/kg\text{-}day)^{-1}$	1.E-03
				Chloroform	1.8E-02	mg/L	2.7E-04	mg/kg-day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	8.E-06
				Trichloroethene	7.3E-03	mg/L	1.1E-04	mg/kg-day	5.9E-03	$(mg/kg\text{-}day)^{-1}$	6.E-07
			Exp. Route Total								1.4E-03
Groundwater	Water	Shower	Dermal contact								
				Benzene	4.0E-03	mg/L	9.1E-06	mg/kg-day	5.5E-02	$(mg/kg\text{-}day)^{-1}$	5.E-07
				Carbon Tetrachloride	1.3E+00	mg/L	5.7E-03	mg/kg-day	7.0E-02	$(mg/kg\text{-}day)^{-1}$	4.E-04
				Chloroform	1.8E-02	mg/L	2.4E-05	mg/kg-day	3.1E-02	$(mg/kg\text{-}day)^{-1}$	7.E-07
				Trichloroethene	7.3E-03	mg/L	1.9E-05	mg/kg-day	5.9E-03	$(mg/kg\text{-}day)^{-1}$	1.E-07
			Exp. Route Total								4.E-04
			Inhalation								
				Benzene	4.0E-03	mg/L	6.2E-04	mg/kg-day	7.8E-06	$(ug/m^3)^{-1}$	5E-09
				Carbon Tetrachloride	1.3E+00	mg/L	2.0E-01	mg/kg-day	6.0E-06	$(ug/m^3)^{-1}$	1E-06
				Chloroform	1.8E-02	mg/L	2.8E-03	mg/kg-day	2.3E-05	$(ug/m^3)^{-1}$	6E-08
				Trichloroethene	7.3E-03	mg/L	1.1E-03	mg/kg-day	2.0E-06	$(ug/m^3)^{-1}$	2E-09
			Exp. Route Total								1.E-06
	Exposure Medium Total										2.E-03

TABLE 5.19
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Current/Future Indoor Industrial Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Receptor Population: Indoor Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Site Sediment	Benzo(a)pyrene	3.E-07	- -	- -	3.E-07	Benzo(a)pyrene	NA	NV	- -	- -	NV
			Benzo(b)fluoranthene	3.E-08	- -	- -	3.E-08	Benzo(b)fluoranthene	NA	NV	- -	- -	NV
			Chemical Total	3.E-07	- -	- -	3.E-07	Chemical Total	- -	NV	- -	- -	NV
	Exposure Medium Total						3.E-07						NV
	Air	Volatile and Fugitive Dust Emissions	Benzo(a)pyrene	- -	2.E-11	- -	2.E-11	Benzo(a)pyrene	NA	- -	NV	- -	NV
			Benzo(b)fluoranthene	- -	2.E-12	- -	2.E-12	Benzo(b)fluoranthene	NA	- -	NV	- -	NV
			Chemical Total	--	1.7E-11	--	2.E-11	Chemical Total		--	NV	--	NV
	Exposure Medium Total						2.E-11						NV
Soil Gas	Air	Vapor Intrusion	Chloroform	- -	2.E-05	- -	2.E-05	Chloroform	NA	- -	0.02	- -	0.02
			Tetrachloroethene	- -	7.E-05	- -	7.E-05	Tetrachloroethene	NA	- -	0.1	- -	0.1
			Chemical Total	- -	8.E-05	- -	8.E-05	Chemical Total		- -	0.1	- -	0.1
	Exposure Medium Total						8.E-05						0.1
Soil and Sediment Total							9.E-05						0.1

Total Risk Across All Media: 9.E-05

Total Hazard Index Across All Media: 0.1

TABLE 5.20
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Current/Future Outdoor Industrial Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Receptor Population: Outdoor Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Site Sediment	Benzo(a)pyrene	5.E-07	- -	5.E-07	1.E-06	Benzo(a)pyrene	NA	NV	- -	NV	NV
			Benzo(b)fluoranthene	5.E-08	- -	5.E-08	1.E-07	Benzo(b)fluoranthene	NA	NV	- -	NV	NV
			Chemical Total	6.E-07	- -	5.E-07	1.E-06	Chemical Total	- -	NV	- -	NV	NV
	Exposure Medium Total						1.E-06						NV
	Air	Volatile and Fugitive Dust Emissions	Benzo(a)pyrene	- -	1.E-11	- -	1.E-11	Benzo(a)pyrene	NA	- -	NV	- -	NV
			Benzo(b)fluoranthene	- -	1.E-12	- -	1.E-12	Benzo(b)fluoranthene	NA	- -	NV	- -	NV
			Chemical Total	--	1.5E-11	--	2.E-11	Chemical Total		--	NV	--	NV
	Exposure Medium Total						2.E-11						NV
Sediment Total							1.E-06						NV

Total Risk Across All Media: 1.E-06

Total Hazard Index Across All Media: NV

TABLE 5.21
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Future Construction Worker
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Site Sediment	Benzo(a)pyrene	8.E-08	- -	3.E-08	1.E-07	Benzo(a)pyrene	NA	NV	- -	NV	NV
			Chemical Total	8.E-08	- -	3.E-08	1.E-07	Chemical Total	- -	NV	- -	NV	NV
	Exposure Medium Total						1.E-07						NV
	Air	Volatile and Fugitive Dust Emissions	Benzo(a)pyrene	- -	1.E-09	- -	1.E-09	Benzo(a)pyrene	NA	- -	NV	- -	NV
			Chemical Total	--	1.1E-09	--	1.E-09	Chemical Total		--	NV	--	NV
	Exposure Medium Total						1.E-09						NV
Sediment Total							1.E-07						NV

Total Risk Across All Media: 1.E-07

Total Hazard Index Across All Media: NV

TABLE 5.22
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Current/Future Trespasser
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current and Future
Receptor Population: Site Trespasser
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Sediment	Site Sediment	Benzo(a)pyrene	1.E-07	- -	9.E-08	2.E-07	Benzo(a)pyrene	NA	NV	- -	NV	NV
			Benzo(b)fluoranthene	1.E-08	- -	9.E-09	2.E-08	Benzo(b)fluoranthene	NA	NV	- -	NV	NV
			Chemical Total	1.E-07	- -	1.E-07	2.E-07	Chemical Total	- -	NV	- -	NV	NV
	Exposure Medium Total						2.E-07						NV
	Air	Volatile and Fugitive Dust Emissions	Benzo(a)pyrene	- -	4.E-13	- -	4.E-13	Benzo(a)pyrene	NA	- -	NV	- -	NV
			Benzo(b)fluoranthene	- -	4.E-14	- -	4.E-14	Benzo(b)fluoranthene	NA	- -	NV	- -	NV
			Chemical Total	--	5.E-13	--	5.E-13	Chemical Total		--	NV	--	NV
	Exposure Medium Total						5.E-13						NV
Soil Total							2.E-07						NV

Total Risk Across All Media	2.E-07	Total Hazard Index Across All Media	NV

Table 5.23
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Current Off-Property Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off -Property Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	1,2-Dichloroethane	NA	0.01	0.0004	0.0005	0.01
			Carbon Tetrachloride	Liver	15	3	4	23
			Chloroform	Liver	0.9	0.5	0.08	1
			Total		16	4	4	24
							Total Hazard Index Across All Media and All Exposure Routes	24

Total Liver HI = 24

Table 5.24
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR POTENTIAL COPCs
Current Off-Property Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off -Property Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	1,2-Dichloroethane	NA	0.003	0.0004	0.0002	0.004
			Carbon Tetrachloride	Liver	5	3	2	11
			Chloroform	Liver	0.3	0.5	0.04	0.9
			Total		6	4	2	11
Groundwater	Groundwater	Irrigation	1,2-Dichloroethane	NA	0.00002	--	0.0000003	0.00002
			Carbon Tetrachloride	Liver	0.026	--	0.0027	0.029
			Chloroform	Liver	0.0015	--	0.000054	0.0016
			Total		0.028	--	0.0028	0.031
							Total Hazard Index Across All Media and All Exposure Routes	11

Total Liver HI = 11

Table 5.25
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Current Off-Property Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Current
Receptor Population: Off -Property Resident
Receptor Age: A ge-adjusted

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap	1,2-Dichloroethane	4.E-06	1.E-08	2.E-07	4.E-06
			Carbon Tetrachloride	1.E-03	9.E-07	3.E-04	1.E-03
			Chloroform	6.E-05	5.E-07	6.E-06	7.E-05
			Total	1.E-03	1.E-06	3.E-04	1.E-03
Groundwater	Groundwater	Irrigation	1,2-Dichloroethane	3.E-08	--	6.E-10	3.E-08
			Carbon Tetrachloride	7.E-06	--	8.E-07	8.E-06
			Chloroform	5.E-07	--	2.E-08	5.E-07
			Total	8.E-06	--	8.E-07	9.E-06
						Total Risk Across All Media and All Exposure Routes	1.E-03

TABLE 5.26
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Future On-Property Child Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Chemical	Non-Carcinogenic Hazard Quotient				
			Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Benzo(a)pyrene	NA	NV	- -	NV	NV
		Benzo(b)fluoranthene	NA	NV	- -	NV	NV
		Chemical Total		NV	- -	NV	NV
	Exposure Medium Total						NV
	Air	Benzo(a)pyrene	NA	- -	NV	- -	NV
		Benzo(b)fluoranthene	NA	- -	NV	- -	NV
		Chemical Total		--	NV	--	NV
	Exposure Medium Total						NV
Subslab Soil Gas	Vapor Intrusion	Chloroform	NA	- -	0.09	- -	0.09
		Tetrachloroethene	NA	- -	0.5	- -	0.5
		Trichloroethene	NA	- -	NV	- -	NV
		Chemical Total		--	0.6	--	0.6
	Exposure Medium Total						0.6
Soil and Sediment Total							0.6
Groundwater	Potable Water Well	Benzene	Lymphocytes	0.06	0.05	0.01	0.1
		Carbon Tetrachloride	Liver	21	5	5	31
		Chloroform	Liver	0.1	0.07	0.01	0.2
		Trichloroethene	NA	2	NA	0.3	2
		Chemical Total		23	5	6	33
Groundwater Total							33
Total Across All Media							34

Total Hazard Index Across All Media	34
Total Liver HI =	31
Total Lymphocytes HI =	0.12

TABLE 5.27
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Future On-Property Adult Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Soil	Site Soil	Benzo(a)pyrene	NA	NV	- -	NV	NV
			Benzo(b)fluoranthene	NA	NV	- -	NV	NV
			Chemical Total	- -	NV	- -	NV	NV
	Exposure Medium Total							NV
	Air	Volatile and Fugitive Dust Emissions	Benzo(a)pyrene	NA	- -	NV	- -	NV
			Benzo(b)fluoranthene	NA	- -	NV	- -	NV
			Chemical Total		--	NV	--	NV
	Exposure Medium Total							NV
Soil Total								NV
Subslab Soil Gas	Vapor Intrusion	Vapor Intrusion	Chloroform	NA	- -	0.09	- -	0.09
			Tetrachloroethene	NA	- -	0.5	- -	0.5
			Trichloroethene	NA	- -	NV	- -	NV
			Chemical Total		--	0.6	--	0.6
	Exposure Medium Total							0.6
Soil and Sediment Total								0.6
Groundwater	Groundwater	Potable Water Well, Inhalation While Showering	Benzene	Lymphocytes	0.02	0.05	0.005	0.07
			Carbon Tetrachloride	Liver	7	5	3	14
			Chloroform	Liver	0.04	0.07	0.005	0.1
			Trichloroethene	NA	0.5	NA	0.1	0.7
			Chemical Total		8	5	3	15
Groundwater	Groundwater	Irrigation	Benzene	Liver	0.0001	--	0.000006	0.0001
			Carbon Tetrachloride	Liver	0.04	--	0.004	0.04
			Chloroform	Kidneys	0.0002	--	0.000007	0.0002
			Trichloroethene	NA	0.003	--	0.0002	0.003
			Chemical Total		0.04	--	0.004	0.04
Groundwater Total								15
Total Across All Media								16

Total Hazard Index Across All Media	16
Total Liver HI =	14
Total Kidneys HI =	0.00020
Total Lymphocytes HI =	0.07

TABLE 5.28
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Future On-Property Age-Adjusted Resident
Garvey Elevator Superfund Site
Hastings, NE

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Age-adjusted Resident

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Sediment	Sediment	Site Sediment					
			Benzo(a)pyrene	1.E-05	- -	4.E-06	2.E-05
			Benzo(b)fluoranthene	1.E-06	- -	4.E-07	2.E-06
			Chemical Total	1.E-05	- -	5.E-06	2.E-05
	Exposure Medium Total						2.E-05
	Air	Volatile and Fugitive Dust Emissions					
			Benzo(a)pyrene	- -	2.E-10	- -	2.E-10
			Benzo(b)fluoranthene	- -	2.E-11	- -	2.E-11
			Chemical Total	--	2.1E-10	--	2.E-10
	Exposure Medium Total						2.E-10
Subslab Soil Gas	Air	Vapor Intrusion	Chloroform	- -	9.E-05	- -	9.E-05
			Tetrachloroethene	- -	3.E-04	- -	3.E-04
			Trichloroethene	- -	3.E-06	- -	3.E-06
			Chemical Total	- -	4.E-04	- -	4.E-04
	Exposure Medium Total						4.E-04
Soil and Sediment Total							4.E-04
Groundwater	Groundwater	Potable Water Well, Inhalation While Showering	Benzene	3.E-06	5.E-09	5.E-07	4.E-06
			Carbon Tetrachloride	1.E-03	1.E-06	4.E-04	2.E-03
			Chloroform	8.E-06	6.E-08	7.E-07	9.E-06
			Trichloroethene	6.E-07	2.E-09	1.E-07	8.E-07
			Chemical Total	1.E-03	1.E-06	4.E-04	2.E-03
Groundwater	Groundwater	Irrigation	Benzene	2E-08	--	1.E-09	3.E-08
			Carbon Tetrachloride	1E-05	--	1.E-06	1.E-05
			Chloroform	6E-08	--	2.E-09	6.E-08
			Trichloroethene	5E-09	--	3.E-10	5.E-09
			Chemical Total	1.E-05	--	1.E-06	1.E-05
Groundwater Total							2.E-03
Total Risk Across All Media							2.E-03

Total Risk Across All Media	2.E-03

Table 5.29
Comparison of Soil Sample RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Soil (µg/kg)		
	RSL[1]	Reporting Limits	
		Min	Max
VOCs			
1,1,1-Trichloroethane	8,700,000	4.3	13
1,1,2,2-Tetrachloroethane	560	4.3	13
1,1,2-Trichloroethane	1,100	4.3	13
1,1,2-Trichlorotrifluoroethane	43,000,000	4.3	13
1,1-Dichloroethane	3,300	4.3	13
1,1-Dichloroethene	240,000	4.3	13
1,2,3-Trichlorobenzene	49,000	4.3	13
1,2,4-Trichlorobenzene	22,000	4.3	13
1,2-Dibromo-3-Chloropropane	5.4	4.3	13
1,2-Dibromoethane	34	4.3	13
1,2-Dichlorobenzene	1,900,000	4.3	13
1,2-Dichloroethane	430	4.3	13
1,2-Dichloropropane	890	4.3	13
1,3-Dichlorobenzene	NE	4.3	13
1,4-Dichlorobenzene	2,400	4.3	13
2-Hexanone	210,000	8.6	26
4-Methyl-2-Pentanone	5,300,000	8.6	26
Benzene	1,100	4.3	13
Bromochloromethane	NE	4.3	13
Bromodichloromethane	270	4.3	13
Bromoform	61,000	4.3	13
Bromomethane	7,300	4.3	13
Carbon Disulfide	820,000	4.3	13
Chlorobenzene	290,000	4.3	13
Chloroethane	15,000,000	4.3	13
Chloromethane	120,000	4.3	13
cis-1,2-Dichloroethene	780,000	4.3	13
cis-1,3-Dichloropropene	1,700	4.3	13
Cyclohexane	7,000,000	4.3	13
Dibromochloromethane	680	4.3	13
Dichlorodifluoromethane	180,000	4.3	13
Ethyl Benzene	5,400	4.3	13
Isopropylbenzene	2,100,000	4.3	13
m and/or p-Xylene	3,400,000	4.3	13

Table 5.29
Comparison of Soil Sample RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Soil (µg/kg)		
		Reporting Limits	
	RSL[(1)]	Min	Max
VOCs			
Methyl tert-butyl ether	43,000	4.3	13
Methylcyclohexane	NE	4.3	13
Methylene Chloride	11,000	4.3	13
o-Xylene	3,800,000	4.3	13
Styrene	6,300,000	4.3	13
Tetrachloroethene	550	4.3	13
Toluene	5,000,000	4.3	13
trans-1,2-Dichloroethene	150,000	4.3	13
trans-1,3-Dichloropropene	1,700	4.3	13
Trichloroethene	2,800	4.3	13
Trichlorofluoromethane	790,000	4.3	13
Vinyl Chloride	60	4.3	13
1,2,4,5-Tetrachlorobenzene	18,000	180	220
2,4,5-Trichlorophenol	6,100,000	180	220
2,4,6-Trichlorophenol	44,000	180	220
2,4-Dichlorophenol	180,000	180	220
2,4-Dimethylphenol	1,200,000	180	220
2,4-Dinitrophenol	120,000	360	430
2,4-Dinitrotoluene	1,600	180	220
2,6-Dinitrotoluene	61,000	180	220
2-Chloronaphthalene	6,300,000	180	220
2-Chlorophenol	390,000	180	220
2-Methylnaphthalene	15,000	180	220
2-Methylphenol	3,100,000	180	220
2-Nitroaniline	610,000	360	430
2-Nitrophenol	NE	180	220
3,3'-Dichlorobenzidine	1,100	180	220
3-Nitroaniline	NE	360	430
4,6-Dinitro-2-methylphenol	4,900	360	430
4-Bromophenyl-phenylether	NE	180	220
4-Chloro-3-methylphenol	6,100,000	180	220
4-Chloroaniline	2,400	180	220
4-Chlorophenyl-phenylether	NE	180	220
4-Methylphenol	310,000	180	220

Table 5.29
Comparison of Soil Sample RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Soil (μg/kg)		
		Reporting Limits	
	RSL(1)	Min	Max
VOCs			
4-Nitroaniline	24,000	360	430
4-Nitrophenol	NE	360	430
Acenaphthene	3,400,000	180	220
Acenaphthylene	NE	180	220
Acetophenone	7,800,000	180	220
Anthracene	17,000,000	180	220
Atrazine	2,100	180	220
Benzaldehyde	7,800,000	180	220
Benzo(a)anthracene	150	180	220
Benzo(a)pyrene	15	180	220
Benzo(b)fluoranthene	150	180	220
Benzo(g,h,i)perylene	NE	180	220
Benzo(k)fluoranthene	1,500	180	220
Biphenyl	3,900,000	180	220
bis(2-Chloroethoxy)methane	180,000	180	220
bis(2-Chloroethyl)ether	210	180	220
bis(2-Chloroisopropyl)ether	4,600	180	220
bis(2-Ethylhexyl)phthalate	35,000	180	220
Butylbenzylphthalate	260,000	180	220
Caprolactam	31,000,000	180	220
SVOCs (μg/kg)			
Carbazole	NE	180	220
Chrysene	15,000	180	220
Dibenz(a,h)anthracene	15	180	220
Dibenzofuran	78,000	180	220
Diethylphthalate	49,000,000	180	220
Dimethylphthalate	NE	180	220
Di-n-butylphthalate	6,100,000	180	220
Di-n-octylphthalate	NE	180	220
Fluoranthene	2,300,000	180	220
Fluorene	2,300,000	180	220
Hexachlorobenzene	300	180	220
Hexachlorobutadiene	6,200	180	220
Hexachlorocyclopentadiene	370,000	180	220

Table 5.29
Comparison of Soil Sample RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Soil (µg/kg)		
		Reporting Limits	
	RSL(1)	Min	Max
SVOCs (µg/kg)			
Hexachloroethane	35,000	180	220
Indeno(1,2,3-cd)pyrene	150	180	220
Isophorone	510,000	180	220
Naphthalene	3,600	180	230
Nitrobenzene	4,800	180	220
N-nitroso-di-n-propylamine	69	180	220
N-nitrosodiphenylamine	99,000	180	220
Pentachlorophenol	3,000	360	430
Phenanthrene	NE	180	220
Phenol	18,000,000	180	220
Pyrene	1,700,000	180	220
Pesticides (µg/kg)			
A-BHC	77	1.8	2.2
Aldrin	29	1.8	2.2
B-BHC	270	1.8	2.2
cis-Chlordane	1600	1.8	2.2
D-BHC	NE	1.8	2.2
Dieldrin	30	3.6	4.3
Endosulfan I	370000	1.8	2.2
Endosulfan II	370000	3.6	4.3
Endosulfan Sulfate	NE	3.6	4.3
Endrin	18000	3.6	4.3
Endrin Aldehyde	NE	3.6	4.3
Endrin Ketone	NE	3.6	4.3
G-BHC	520	1.8	2.2
Heptachlor	110	1.8	2.2
p,p'-DDD	2000	3.6	4.3
p,p'-DDE	1400	3.6	4.3
p,p'-DDT	1700	3.6	4.3
p,p'-Methoxychlor	310000	18	22
Toxaphene	440	180	220
trans-Chlordane	1600	1.8	2.2

Table 5.29
Comparison of Soil Sample RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Soil (μg/kg)		
	RSL[1]	Reporting Limits	
		Min	Max
UAA Pesticides (μg/kg)			
Malathion	1,200,000	74.3	96.8
Herbicides (μg/kg)			
2,4,5-T	610,000	10.8	14.1
2,4,5-TP	490,000	8.8	11.5
2,4-D	690,000	18.1	23.6
PCBs (μg/kg)			
Aroclor 1016	3900	36	43
Aroclor 1221	140	36	43
Aroclor 1232	140	36	43
Aroclor 1242	220	36	43
Aroclor 1254	220	36	43
Aroclor 1260	220	36	43

Notes:

Shaded results indicate that the reporting limit is greater than the RSL.

[1] EPA Regional Screening Levels for Residential Soil, November 2010.

μg/kg - microgram per kilogram

NE - Not Established

RSL - Regional Screening Level

Table 5.30
Comparison of Sediment RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Sediments (μg/kg)		
		Reporting Limits	
	RSL[(1)]	Min	Max
VOCs			
1,1,1-Trichloroethane	8,700,000	5.9	9.1
1,1,2,2-Tetrachloroethane	560	5.9	9.1
1,1,2-Trichloroethane	1,100	5.9	9.1
1,1,2-Trichlorotrifluoroethane	43,000,000	5.9	9.1
1,1-Dichloroethane	3,300	5.9	9.1
1,1-Dichloroethene	240,000	5.9	9.1
1,2,3-Trichlorobenzene	49,000	5.9	9.1
1,2,4-Trichlorobenzene	22,000	5.9	9.1
1,2-Dibromo-3-Chloropropane	5.4	5.9	9.1
1,2-Dibromoethane	34	5.9	9.1
1,2-Dichlorobenzene	1,900,000	5.9	9.1
1,2-Dichloroethane	430	5.9	9.1
1,2-Dichloropropane	890	5.9	9.1
1,3-Dichlorobenzene	NE	5.9	9.1
1,4-Dichlorobenzene	2,400	5.9	9.1
2-Hexanone	210,000	5.9	9.1
4-Methyl-2-Pentanone	5,300,000	5.9	9.1
Benzene	1,100	5.9	9.1
Bromodichloromethane	270	5.9	9.1
Bromoform	61,000	5.9	9.1
Bromomethane	7,300	5.9	9.1
Carbon Disulfide	820,000	5.9	9.1
Carbon Tetrachloride	610	5.9	9.1
Chlorobenzene	290,000	5.9	9.1
Chloroethane	15,000,000	5.9	9.1
Chloroform	290	5.9	9.1
Chloromethane	120,000	5.9	9.1
cis-1,2-Dichloroethene	780,000	5.9	9.1
cis-1,3-Dichloropropene	1,700	5.9	9.1
Cyclohexane	7,000,000	5.9	9.1
Dibromochloromethane	680	5.9	9.1
Dichlorodifluoromethane	180,000	5.9	9.1
Ethyl Benzene	5,400	5.9	9.1

Table 5.30
Comparison of Sediment RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Sediments (µg/kg)		
		Reporting Limits	
	RSL[1]	Min	Max
VOCs			
Methyl Acetate	78,000,000	5.9	9.1
Methyl tert-butyl ether	43,000	5.9	9.1
Methylcyclohexane	NE	5.9	9.1
Methylene Chloride	11,000	5.9	9.1
Naphthalene	3,600	12	18
o-Xylene	3,800,000	5.9	9.1
Styrene	6,300,000	5.9	9.1
Tetrachloroethene	550	5.9	9.1
trans-1,2-Dichloroethene	150,000	5.9	9.1
trans-1,3-Dichloropropene	1,700	5.9	9.1
Trichloroethene	2,800	5.9	9.1
Trichlorofluoromethane	790,000	5.9	9.1
Vinyl Chloride	60	5.9	9.1
1,2,4,5-Tetrachlorobenzene	18,000	87	380
2,4,5-Trichlorophenol	6,100,000	87	380
2,4,6-Trichlorophenol	44,000	87	380
2,4-Dichlorophenol	180,000	87	380
2,4-Dimethylphenol	1,200,000	220	960
2,4-Dinitrophenol	120,000	220	960
2,4-Dinitrotoluene	1,600	220	960
2,6-Dinitrotoluene	61,000	87	380
2-Chloronaphthalene	6,300,000	440	1900
2-Chlorophenol	390,000	87	380
2-Methylnaphthalene	1,000	87	380
2-Methylphenol	3,100,000	87	380
2-Nitroaniline	610,000	220	960
2-Nitrophenol	NE	87	380
3,3'-Dichlorobenzidine	1,100	220	960
3-Nitroaniline	NE	220	960
4,6-Dinitro-2-methylphenol	4,900	220	960
4-Bromophenyl-phenylether	NE	440	1900

Table 5.30
Comparison of Sediment RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Sediments (μg/kg)		
	RSL[(1)]	Reporting Limits	
		Min	Max
VOCs			
4-Chloro-3-methylphenol	6,100,000	220	960
4-Chloroaniline	2,400	440	1900
4-Chlorophenyl-phenylether	NE	87	380
4-Methylphenol	310,000	220	960
4-Nitroaniline	24,000	440	1900
4-Nitrophenol	NE	87	380
Acenaphthene	3,400,000	220	960
Acenaphthylene	NE	440	1900
Acetophenone	7,800,000	440	1900
Anthracene	17,000,000	87	380
Atrazine	2,100	87	380
Benzaldehyde	7,800,000	87	380
Benzo(a)anthracene	150	87	380
Benzo(g,h,i)perylene	NE	87	380
Benzo(k)fluoranthene	1,500	87	380
Biphenyl	3,900,000	440	1900
bis(2-Chloroethoxy)methane	180,000	220	960
bis(2-Chloroethyl)ether	210	87	380
bis(2-Chloroisopropyl)ether	4,600	87	380
bis(2-Ethylhexyl)phthalate	35,000	87	380
Butylbenzylphthalate	260,000	220	960
Caprolactam	31,000,000	220	960
SVOCs (μg/kg)			
Carbazole	NE	220	960
Dibenz(a,h)anthracene	15	87	380
Dibenzofuran	78,000	87	380
Diethylphthalate	49,000,000	87	380
Dimethylphthalate	NE	87	380
Di-n-butylphthalate	6,100,000	220	960
Di-n-octylphthalate	NE	220	960
Fluoranthene	2,300,000	87	380
Fluorene	2,300,000	87	380
Hexachlorobenzene	300	87	380

Table 5.30
Comparison of Sediment RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Sediments (μg/kg)		
	RSL[1]	Reporting Limits	
		Min	Max
SVOCs (μg/kg)			
Hexachlorobutadiene	6,200	87	380
Hexachlorocyclopentadiene	370,000	87	380
Hexachloroethane	35,000	87	380
Indeno(1,2,3-cd)pyrene	150	87	380
Isophorone	510,000	87	380
Naphthalene	3,600	87	380
Nitrobenzene	4,800	87	380
N-nitroso-di-n-propylamine	69	220	960
N-nitrosodiphenylamine	99,000	87	380
Pentachlorophenol	3,000	220	960
Phenanthrene	NE	87	380
Phenol	18,000,000	87	380
Pyrene	1,700,000	87	380
Pesticides (μg/kg)			
A-BHC	77	0.32	0.37
Aldrin	29	0.64	0.73
B-BHC	270	1.1	1.2
D-BHC	NE	0.42	0.49
Endosulfan I	370000	0.64	0.73
Endosulfan II	370000	0.85	4.5
Endosulfan Sulfate	NE	0.87	9.4
Endrin	18000	0.87	9.4
Endrin Aldehyde	NE	1.1	12
Endrin Ketone	NE	0.87	9.4
G-BHC	520	0.42	0.49
Heptachlor	110	0.65	7
Heptachlor Epoxide	53	0.65	3.2
p,p'-DDD	2000	0.85	0.98
p,p'-Methoxychlor	310000	2.1	11
Toxaphene	440	110	230
trans-Chlordane	1600	4.40	24.00

Table 5.30
Comparison of Sediment RLs to Resident Soil RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Sediments (μg/kg)		
		Reporting Limits	
	RSL[1]	Min	Max
UAA Pesticides (μg/kg)			
Malathion	1,200,000	4.2	4.9
Herbicides (μg/kg)			
2,4,5-T	610,000	10	10
2,4,5-TP	490,000	10	10
2,4-D	690,000	20	20
PCBs (μg/kg)			
Aroclor 1016	3900	21	24
Aroclor 1221	140	21	24
Aroclor 1232	140	21	24
Aroclor 1242	220	21	24
Aroclor 1248	220	21	24
Aroclor 1254	220	11	12
Aroclor 1260	220	53	120

Notes:

Shaded results indicate that the reporting limit is greater than the RSL.

(1) EPA Regional Screening Levels for Residential Soil, November 2010.

μg/kg - microgram per kilogram

NE - Not Established

RSL - Regional Screening Level

Table 5.31
Comparison of Reporting Limits and RSLs
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Groundwater (μg/L)							
	RSL[2]	Basis for RSL	Reporting Limits		Minimum RL		Maximum RL	
			Min	Max	Screening Level Cancer Risk	Screening Level Hazard Quotient	Screening Level Cancer Risk	Screening Level Hazard Quotient
EDB/DBCP								
1,2-Dibromo-3-Chloropropane	0.00032	C	0.02	0.02	6E-05	NC	6E-05	NC
1,2-Dibromoethane	0.0065	C	0.02	0.02	3E-06	NC	3E-06	NC
VOCs								
1,1,2,2-Tetrachloroethane	0.067	C	0.5	10	7E-06	NC	1E-04	NC
1,1,2-Trichloroethane	0.24	C	0.5	5	2E-06	NC	2E-05	NC
1,1,2-Trichlorotrifluoroethane	59000	N	0.5	5	NC	NC	NC	NC
1,1-Dichloroethane	2.4	C	0.5	5	2E-07	NC	2E-06	NC
1,1-Dichloroethene	340	N	0.5	5	NC	NC	NC	NC
1,2,3-Trichlorobenzene	29	N	0.5	5	NC	NC	NC	NC
1,2,4-Trichlorobenzene	2.3	C	0.5	5	2E-07	NC	2E-06	NC
1,2-Dichlorobenzene	370	N	0.5	5	NC	NC	NC	NC
1,2-Dichloropropane	0.39	C	0.5	5	1E-06	NC	1E-05	NC
1,3-Dichlorobenzene	NE		0.5	5	NC	NC	NC	NC
1,4-Dichlorobenzene	0.43	C	0.5	5	1E-06	NC	1E-05	NC
2-Hexanone	47	N	2	50	NC	NC	NC	1.06
4-Methyl-2-Pentanone	2000	N	1	50	NC	NC	NC	NC
Bromochloromethane	NE		0.5	5	NC	NC	NC	NC
Bromodichloromethane	0.12	C	0.5	5	4E-06	NC	4E-05	NC
Bromoform	8.5	C	0.5	5	NC	NC	NC	NC
Bromomethane	8.7	N	0.5	5	NC	NC	NC	NC
Chloroethane	21000	N	0.5	5	NC	NC	NC	NC
Chloromethane	190	N	0.5	5	NC	NC	NC	NC
cis-1,2-Dichloroethene	370	N	0.5	5	NC	NC	NC	NC
cis-1,3-Dichloropropene	0.43	C	0.5	5	1E-06	NC	1E-05	NC
Cyclohexane	13000	N	0.5	5	NC	NC	NC	NC

Table 5.31
Comparison of Reporting Limits and RSLs
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Groundwater (μg/L)							
	RSL(2)	Basis for RSL	Reporting Limits		Minimum RL		Maximum RL	
			Min	Max	Screening Level Cancer Risk	Screening Level Hazard Quotient	Screening Level Cancer Risk	Screening Level Hazard Quotient
VOCs (μg/L)								
Dibromochloromethane	0.15	C	0.5	5	3E-06	NC	3E-05	NC
Dichlorodifluoromethane	390	N	0.5	5	NC	NC	NC	NC
Ethyl Benzene	1.5	C	0.5	5	3E-07	NC	3E-06	NC
Isopropylbenzene	680	N	0.5	5	NC	NC	NC	NC
Methyl tert-butyl ether	12	C	0.5	5	NC	NC	NC	NC
Methylcyclohexane	NE		0.5	5	NC	NC	NC	NC
Naphthalene	0.14	C	0.5	4	4E-06	NC	3E-05	NC
Styrene	1600	N	0.5	5	NC	NC	NC	NC
Tetrachloroethene	0.11	C	0.5	5	5E-06	NC	5E-05	NC
trans-1,2-Dichloroethene	110	N	0.5	5	NC	NC	NC	NC
trans-1,3-Dichloropropene	0.43	C	0.5	5	1E-06	NC	1E-05	NC
Trichlorofluoromethane	1300	N	0.5	5	NC	NC	NC	NC
Vinyl Chloride	0.016	C	0.5	5	3E-05	NC	3E-04	NC
SVOCs (μg/kg)								
1,2,4,5-Tetrachlorobenzene	11	N	5	5	NC	NC	NC	NC
2,3,4,6-Tetrachlorophenol	1,100	N	5	5	NC	NC	NC	NC
2,4,5-Trichlorophenol	3,700	N	5	5	NC	NC	NC	NC
2,4,6-Trichlorophenol	6.1	C	5	5	NC	NC	NC	NC
2,4-Dichlorophenol	110	N	5	5	NC	NC	NC	NC
2,4-Dimethylphenol	730	N	5	5	NC	NC	NC	NC
2,4-Dinitrophenol	73	N	10	10	NC	NC	NC	NC
2,4-Dinitrotoluene	0.22	C	5	5	2E-05	NC	2E-05	NC
2,6-Dinitrotoluene	37	N	5	5	NC	NC	NC	NC
2-Chloronaphthalene	2,900	N	5	5	NC	NC	NC	NC
2-Chlorophenol	180	N	5	5	NC	NC	NC	NC
2-Methylnaphthalene	150	N	5	5	NC	NC	NC	NC

Table 5.31
Comparison of Reporting Limits and RSLs
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Groundwater (μg/L)							
	RSL[(2)]	Basis for RSL	Reporting Limits		Minimum RL		Maximum RL	
			Min	Max	Screening Level Cancer Risk	Screening Level Hazard Quotient	Screening Level Cancer Risk	Screening Level Hazard Quotient
SVOCs (μg/kg)								
2-Methylphenol	1,800	N	5	5	NC	NC	NC	NC
2-Nitroaniline	370	N	10	10	NC	NC	NC	NC
2-Nitrophenol	NE		5	5	NC	NC	NC	NC
3,3'-Dichlorobenzidine	0.15	C	5	5	3E-05	NC	3E-05	NC
3-Nitroaniline	NE		10	10	NC	NC	NC	NC
4,6-Dinitro-2-methylphenol	2.9	N	10	10	NC	3.4	NC	3.45
4-Bromophenyl-phenylether	NE		5	5	NC	NC	NC	NC
4-Chloro-3-methylphenol	3700	N	5	5	NC	NC	NC	NC
4-Chloroaniline	0.34	C	5	5	1E-05	NC	1E-05	NC
4-Chlorophenyl-phenylether	NE		5	5	NC	NC	NC	NC
4-Methylphenol	180	N	5	5	NC	NC	NC	NC
4-Nitroaniline	3.4	C	10	10	3E-06	NC	3E-06	NC
4-Nitrophenol	NE		10	10	NC	NC	NC	NC
Acenaphthene	2,200	N	5	5	NC	NC	NC	NC
Acenaphthylene	NE		5	5	NC	NC	NC	NC
Acetophenone	3,700	N	5	5	NC	NC	NC	NC
Anthracene	11,000	N	5	5	NC	NC	NC	NC
Atrazine	0.29	C	5	5	2E-05	NC	2E-05	NC
Benzaldehyde	3,700	N	5	5	NC	NC	NC	NC
Benzo(a)anthracene	0.029	C	5	5	2E-04	NC	2E-04	NC
Benzo(a)pyrene	0.0029	C	5	5	2E-03	NC	2E-03	NC
Benzo(b)fluoranthene	0.029	C	5	5	2E-04	NC	2E-04	NC
Benzo(g,h,i)perylene	NE		5	5	NC	NC	NC	NC
Benzo(k)fluoranthene	0.29	C	5	5	2E-05	NC	2E-05	NC
Biphenyl	1,800	N	5	5	NC	NC	NC	NC
bis(2-Chloroethoxy)methane	110	N	5	5	NC	NC	NC	NC

Table 5.31
Comparison of Reporting Limits and RSLs
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Groundwater (µg/L)							
	RSL(2)	Basis for RSL	Reporting Limits		Minimum RL		Maximum RL	
			Min	Max	Screening Level Cancer Risk	Screening Level Hazard Quotient	Screening Level Cancer Risk	Screening Level Hazard Quotient
SVOCs (µg/kg)								
bis(2-Chloroethyl)ether	0.012	C	5	5	4E-04	NC	4E-04	NC
bis(2-Chloroisopropyl)ether	0.32	C	5	5	2E-05	NC	2E-05	NC
bis(2-Ethylhexyl)phthalate	4.8	C	5	5	1E-06	NC	1E-06	NC
Butylbenzylphthalate	35	C	5	5	NC	NC	NC	NC
Caprolactam	18,000	N	5	5	NC	NC	NC	NC
Carbazole	NE		5	5	NC	NC	NC	NC
Chrysene	2.9	C	5	5	2E-06	NC	2E-06	NC
Dibenz(a,h)anthracene	0.0029	C	5	5	2E-03	NC	2E-03	NC
Dibenzofuran	37	N	5	5	NC	NC	NC	NC
Diethylphthalate	29,000	N	5	5	NC	NC	NC	NC
Dimethylphthalate	NE		5	5	NC	NC	NC	NC
Di-n-butylphthalate	3,700	N	5	5	NC	NC	NC	NC
Di-n-octylphthalate	NE		5	5	NC	NC	NC	NC
Fluoranthene	1,500	N	5	5	NC	NC	NC	NC
Fluorene	1,500	N	5	5	NC	NC	NC	NC
Hexachlorobenzene	0.042	C	5	5	1E-04	NC	1E-04	NC
Hexachlorobutadiene	0.86	C	5	5	6E-06	NC	6E-06	NC
Hexachlorocyclopentadiene	220	N	5	5	NC	NC	NC	NC
Hexachloroethane	4.8	C	5	5	1E-06	NC	1E-06	NC
Indeno(1,2,3-cd)pyrene	0.029	C	5	5	2E-04	NC	2E-04	NC
Isophorone	71	C	5	5	NC	NC	NC	NC
Naphthalene	0.14	C	5	5	4E-05	NC	4E-05	NC
Nitrobenzene	0.12	C	5	5	4E-05	NC	4E-05	NC
N-nitroso-di-n-propylamine	0.0096	C	5	5	5E-04	NC	5E-04	NC
N-nitrosodiphenylamine	14	C	5	5	NC	NC	NC	NC
Pentachlorophenol	0.56	C	10	10	2E-05	NC	2E-05	NC

Table 5.31
Comparison of Reporting Limits and RSLs
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Groundwater (μg/L)							
	RSL[(2)]	Basis for RSL	Reporting Limits		Minimum RL		Maximum RL	
			Min	Max	Screening Level Cancer Risk	Screening Level Hazard Quotient	Screening Level Cancer Risk	Screening Level Hazard Quotient
SVOCs (μg/kg)								
Phenanthrene	NE		5	5	NC	NC	NC	NC
Phenol	11,000	N	5	5	NC	NC	NC	NC
Pyrene	1,100	N	5	5	NC	NC	NC	NC
Pesticides (μg/kg)								
A-BHC	0.011	C	0.05	0.07	5E-06	NC	6E-06	NC
Aldrin	0.004	C	0.05	0.07	1E-05	NC	2E-05	NC
B-BHC	0.037	C	0.05	0.07	1E-06	NC	2E-06	NC
cis-Chlordane	0.19	C	0.05	0.07	NC	NC	NC	NC
D-BHC	NE		0.05	0.07	NC	NC	NC	NC
Dieldrin	0.0042	C	0.1	0.14	2E-05	NC	3E-05	NC
Endosulfan I	220	N	0.05	0.07	NC	NC	NC	NC
Endosulfan II	220	N	0.1	0.14	NC	NC	NC	NC
Endosulfan Sulfate	NE		0.1	0.14	NC	NC	NC	NC
Endrin	11	N	0.1	0.14	NC	NC	NC	NC
Endrin Aldehyde	NE		0.1	0.14	NC	NC	NC	NC
Endrin Ketone	NE		0.1	0.14	NC	NC	NC	NC
G-BHC	0.061	C	0.05	0.07	8E-07	NC	1E-06	NC
Heptachlor	0.015	C	0.05	0.07	3E-06	NC	5E-06	NC
Heptachlor Epoxide	0.0074	C	0.05	0.07	7E-06	NC	1E-05	NC
p,p'-DDD	0.28	C	0.1	0.14	NC	NC	NC	NC
p,p'-DDE	0.2	C	0.1	0.14	NC	NC	NC	NC
p,p'-DDT	0.2	C	0.1	0.14	NC	NC	NC	NC
p,p'-Methoxychlor	180	N	0.5	0.71	NC	NC	NC	NC
Toxaphene	0.061	C	5	7.1	8E-05	NC	1E-04	NC
trans-Chlordane	0.19	C	0.05	0.07	NC	NC	NC	NC

Table 5.31
Comparison of Reporting Limits and RSLs
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Groundwater (μg/L)							
	RSL[2]	Basis for RSL	Reporting Limits		Minimum RL		Maximum RL	
			Min	Max	Screening Level Cancer Risk	Screening Level Hazard Quotient	Screening Level Cancer Risk	Screening Level Hazard Quotient
UAA Pesticides (μg/kg)								
Malathion	730	N	0.9	0.9	NC	NC	NC	NC
Herbicides (μg/kg)								
2,4,5-T	370	N	0.78	0.78	NC	NC	NC	NC
2,4,5-TP	290	N	0.59	0.59	NC	NC	NC	NC
2,4-D	370	N	0.87	0.87	NC	NC	NC	NC

Notes:

Shaded results indicate that the reporting limit is greater than the RSL.

(2) EPA Regional Screening Levels for Tapwater.

DBCP - 1,2-Dibromo-3-Chloropropane

EDB - 1,2-Dibromoethane

μg/L - micrograms per liter

NE - Not Established

RSL - Regional Screening Level

Table 5.32
Comparison of Adjusted Subslab Sample RLs to Resident Air RSLs
Garvey Elevator Superfund Site
Hastings, NE

Analyte	Soil Gas ($\mu g/m^3$)		
	RSL[1]	Reporting Limits	
		Min	Max
VOCs			
1,1,2,2-Tetrachloroethane	0.042	3.4	3.4
1,1,2-Trichloroethane	0.15	2.7	2.7
1,1,2-Trichlorotrifluoroethane	31,000	3.8	3.8
1,1-Dichloroethane	1.5	2	2
1,1-Dichloroethene	210	2	2
1,2,3-Trichlorobenzene	NE	3.7	3.7
1,2,4-Trichlorobenzene	2.1	2.5	2.5
1,2-Dibromoethane	0.0041	3.8	3.8
1,2-Dichlorobenzene	210	3	3
1,2-Dichloroethane	0.094	2	2
1,2-Dichloropropane	0.24	2.3	2.3
1,3,5-Trimethylbenzene	NE	2.5	2.5
1,3-Dichlorobenzene	NE	3	3
4-Methyl-2-Pentanone	3100	2.1	2.1
Bromodichloromethane	0.066	3.4	3.4
Bromoform	2.2	5.2	5.2
Bromomethane	5.2	1.9	1.9
Chlorobenzene	52	2.3	2.3
Chloroethane	10,000	1.3	1.3
Chloromethane	94	1	1
cis-1,2-Dichloroethene	NE	2	2
cis-1,3-Dichloropropene	0.61	2.3	2.3
Dibromochloromethane	0.09	4.3	4.3
Ethyl Benzene	0.97	2.2	2.2
Heptane	NE	2.1	2.1
Hexachlorobutadiene	0.11	5.3	5.3
Isopropylbenzene	420	2.5	2.5
m and/or p-Xylene	730	2.2	2.2
Naphthalene	0.072	5.2	5.2
o-Xylene	730	2.2	2.2
Styrene	1,000	2.1	2.1
trans-1,2-Dichloroethene	63	2	2
trans-1,3-Dichloropropene	0.61	2.3	2.3
Vinyl Chloride	0.16	1.3	1.3

Notes:

Shaded results indicate that the reporting limit is greater than the RSL.

[1] EPA Regional Screening Levels, November 2010, Residential Air.

$\mu g/m^3$ - micrograms per cubic meter

NE - Not Established

RSL - Regional Screening Level

6.0 SUMMARY AND CONCLUSIONS

HGL was tasked under Region 7 U.S. EPA AES contract EP-S7-05-05, Task Order 0033 and 0034 to complete a RI/FS at the Garvey Elevator Superfund Site located in Hastings, Nebraska. The RI/FS activities were conducted to help meet the overall performance objectives for the site, which included quantitatively estimating the risk to human health at the site. A baseline HHRA was conducted to evaluate whether chemical concentrations detected in media at the site pose a significant threat to human health.

Maximum detected chemical concentrations in surface and subsurface soil, groundwater, sediment, and subslab soil gas were screened using the appropriate RSLs to select COPCs for the HHRA. Potential or hypothetical exposure scenarios were evaluated in the HHRA. Exposure parameters were based on agency guidance, site-specific information, and professional judgment. Estimates of cancer and non-cancer risks were calculated for each exposure scenario. The results are summarized below.

- Current and Future Indoor Industrial Worker exposure to Sediment and Subslab Soil Gas: ILCR = 9E-05; HI = 0.1.
- Current and Future Outdoor Industrial Worker exposure to Sediment: ILCR = 1E-06; HI = 0.
- Future Construction Worker exposure to Sediment: ILCR = 1E-07; HI = 0.
- Current and Future Adolescent Trespasser exposure to Sediment: ILCR = 2E-07; HI = 0.
- Current Off-Property Resident exposure to Groundwater: ILCR = 1E-03; Child HI = 24, Total liver HI = 24; Adult HI = 11; Total liver HI = 11.
- Future On-Property Resident exposure to Sediment, Subslab Soil Gas, and Groundwater: ILCR = 2E-03; Child HI = 34, Total liver HI = 31; Adult HI = 16, Total liver HI = 14.

Exposures to current and future industrial workers (indoor and outdoor), current and future adolescent trespassers, current and future off-property residents and the farmer resident, future construction workers, and future on-property residents and the farmer resident were considered. Site conditions are protective of all exposure scenarios except the current and future off-property resident, and future on-property resident. The primary contributors to non-cancer risk are carbon tetrachloride and TCE in groundwater. The primary chemical contributor to cancer risk is carbon tetrachloride in groundwater and PCE in subslab soil gas.

The human health risk assessment indicated that current site conditions are not protective of human health for the current/future off-property resident and future on-property resident under an unrestricted land use scenario.

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ATTACHMENT 1

CONSTRUCTION WORKER VF CALCULATIONS

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Volatilization Factor Calculation

The equations for calculation of the volatilization factor (VF) for construction/excavation activities are presented below. These equations were obtained from Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, OSWER 9355.4-24, USEPA, 2002.

The VF is calculated using the following equation:

$$VF = \frac{Q/C_{sa} \times (1/F_D) \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times r_b \times D_A} \quad \text{(Eqn. 5-14)}$$

DA is calculated as follows:

$$DA = \frac{[(Q_a^{10/3} \times D_i \times H' + Q_w^{10/3} \times D_w)/n^2]}{(r_b \times K_d + Q_w + Q_a \times H')} \quad \text{(Eqn. 5-14)}$$

Where: VF = volatilization factor
D_A = apparent diffusivity (cm^2/s)
T = exposure interval (s) (total construction period in seconds) (3.15×10^7 seconds for long-term construction project; 3.63×10^6 seconds for hot spot analysis)
r_b = soil bulk density (g/cm^3) (default value of 1.5)
Q_a = air-filled soil porosity = $n - Q_w$ (default value of 0.28)
n = total porosity = $1 - r_b/r_s$ (default value of 0.43)
Q_w = water-filled soil porosity (default value of 0.15)
r_s = soil particle density (g/cm^3) (default value of 2.65)
K_d = $K_{oc} \times f_{oc}$ (chemical specific)
f_{oc} = fraction organic carbon in soil (default value of 0.006)
K_{oc} = organic carbon partition coefficient (chemical specific)
D_i = diffusivity in air (cm^2/s) (chemical specific)
D_w = diffusivity in water (cm^2/s) (chemical specific)
H' = dimensionless form of the Henry's law constant (chemical specific)

The default value for F_D is 0.185.

The term Q/C_{sa} is calculated as:

$$Q/C_{sa} = A \times \exp[(\ln A_c - B)^2/C] \quad \text{(Eqn. 5-15)}$$

Where: A = constant, default = 2.4538
B = constant, default = 17.566
C = constant, default = 189.0426
A_c = areal extent of site soil contamination (acres) (actual site acreage for long-term construction project; 0.006 acres for hot spot analysis)

APPENDIX V

SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

FINAL
SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
GARVEY ELEVATOR SUPERFUND SITE
HASTINGS, NEBRASKA

Prepared for:

U.S. Environmental Protection Agency Region 7
901 North 5th Street
Kansas City, KS 66101

Architect and Engineering Services Contract EP-S7-05-05
Task Order: 0033 and 0034

April 2011

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901 North 5th Street
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Prepared by:

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April 2011

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (continued)

LIST OF ATTACHMENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

AES	Architect and Engineering Services
AGP	AGP Grain Marketing, LLC.
amsl	above mean sea level
AST	above-ground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
AUF	area use factor
BAF	bioaccumulation factor
bgs	below ground surface
^oC	degrees Celcius
CCME	Canadian Council of Ministers of the Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CICAD	Concise International Chemical Assessment Document
COPC	chemical of potential concern
COPEC	chemical of potential ecological concern
CSM	conceptual site model
Eco-SSLs	Ecological Soil Screening Levels
EC_{50}	50% effective concentration
EDB	ethylene dibromide
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
EQ	ecological quotient
GET	Groundwater Extraction and Treatment
HGL	HydroGeoLogic, Inc.
HQ	Hazard Quotient
LC	lethal concentration
LD	lethal dose
LOAEL	lowest observed adverse effect level
MATC	maximum acceptable toxicant concentration
MCL	maximum contaminant level
μg/L	micrograms per liter
μg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
mm Hg	millimeters mercury

NDNR	Nebraska Department of Natural Resources
NGPC	Nebraska Game and Parks Commission
NOAEL	no observed adverse effect level
NOEC	no observed effects concentration
OMEE	Ontario Ministry of Environment and Energy
ORNL	Oak Ridge National Laboratory
PAH	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
ppb	parts per billion
PPDB	Pesticide Properties DataBase
PRG	preliminary remediation goal
RA	Remedial Action
RI/FS	Remedial Investigation
SLERA	screening level ecological risk assessment
SMDP	scientific management decision point
SQL	sample quantitation limit
SVE	soil vapor extraction
SVOCs	semivolatile organic compounds
TCE	trichloroethene
USFWS	United States Fish and Wildlife Service
VOCs	volatile organic compounds
Vontz	Vontz Paving, Inc.

FINAL
SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
GARVEY ELEVATOR SUPERFUND SITE
HASTINGS, NEBRASKA

1.0 INTRODUCTION

This screening level ecological risk assessment (SLERA) was prepared to support the Remedial Investigation/Feasibility Study (RI/FS) activities at the Garvey Elevator Superfund Site (site) located in Hastings, Nebraska. The site is currently owned and operated by AGP Grain Marketing, LLC (AGP). The RI/FS activities are being conducted by HydroGeoLogic, Inc. (HGL) under Region 7 U.S. Environmental Protection Agency (EPA) Architect and Engineering Services (AES) contract EP-S7-05-05, Task Order 0033.

This SLERA evaluates the risk to ecological receptors posed by the presence of chemicals at the site if no remedial action were performed. The SLERA was conducted in accordance with *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (EPA, 1997a), and as outlined in the Risk Assessment Technical Memorandum (HGL, 2010). The SLERA evaluated the potential risks to ecological receptors associated with exposure to site media through a screening level problem formulation and a screening level exposure estimate and risk calculation. The initial screening outlined in EPA, 1997a, is highly conservative. To provide additional information to support a scientific/management decision, site contaminants retained as chemicals of potential ecological concern (COPECs) after the initial screening were evaluated in greater detail.

1.1 SCREENING LEVEL PROBLEM FORMULATION

In the screening-level problem formulation, the risk assessor develops a conceptual model for the site to address five issues. These are:

- Environmental setting and contaminants known or suspected to exist at the site (Section 1.1.1);
- Contaminant fate and transport mechanisms that might exist at the site (Section 1.1.2);
- The mechanisms of ecotoxicity associated with contaminants and likely categories of receptors that could be affected (Section 1.1.3);
- The complete exposure pathways that exist at the site (Section 1.1.4); and
- Selection of endpoints to screen for ecological risk (Section 1.1.5)

1.1.1 Environmental Setting and Contaminants at the Site

The Garvey Elevator Superfund Site is located southwest outside the limits of the city of Hastings in Adams County, Nebraska (Figures 1.1 and 1.2). The Garvey Elevator Superfund

Site includes the Garvey Elevators property at 2315 West Highway 6 and downgradient areas underlain by the contaminated groundwater plume that originates from the grain storage facility. EPA has designated OU1 as the area of soil and groundwater contamination on and immediately off the Garvey Elevators property. OU2 is defined as contaminated groundwater farther downgradient from the grain storage facility that extends to approximately 4.3 miles to the east. The topography of the grain storage facility area where the elevator buildings are located is relatively flat (Figure 1.3). The topography slopes gradually to the south and west away from the area of the elevator buildings into agricultural fields. The field to the west of the buildings slopes in from the east and the west (Figure 1.3). Surface soils in the vicinity of the site consist predominantly of silty loam (USDA, 1974). The elevation at the former site is 1,930 feet above mean sea level (amsl). A complete description of the environmental setting is provided in the following sections.

1.1.1.1 On- and Off-Site Land Uses

The Garvey Elevators grain storage facility was constructed in 1959. Before the property was developed, the area was used for row crop production. The grain storage facility predominantly is surrounded by agricultural land, including portions of the Garvey Elevators property (Figures 1.1 and 1.2). More detail regarding land use in the area can be found in Section 3.3 of the RI/FS. Vontz Paving, Inc. (Vontz), an asphalt paving contractor, is located on Highway 6 north of the grain storage facility lies. One private residence is located on Highway 6 east from Vontz. Several private residences are located northwest of the grain storage facility at the intersection of Marion Road and Highway 6 (Figure 1.2).

Hastings is situated within the Little Blue Natural Resources District Groundwater Management Area. Under the provisions of the Rules and Regulations for Enforcement of this district, no wells can be installed without a permit (Layne GeoSciences, 1997). The elevator facility buildings and property southward are not included in the Wellhead Protection area. All private wells identified within the affected area have been placed on an alternative water supply.

1.1.1.2 Historical and Current On-Site Facilities

The grain storage facility is an active 8-million bushel capacity grain elevator currently owned and operated by AGP, and Garvey Elevators began operation as a grain storage facility in 1959. The property encompasses approximately 106 acres, 22 of which have historically been used for facility operations. The facilities at the Garvey Elevators terminal consist of a concrete elevator head house and elevator, flat storage building, steel storage bins, and associated buildings for facility maintenance, offices and breakroom, and chemical storage. The majority of the remaining 84 acres of property is used for crop production. The area surrounding the grain storage facility is rural with a sparse distribution of residential properties to the north, east and west. The closest residence is immediately adjacent to northeast property boundary approximately 1,200 feet north of the grain storage elevator.

Garvey Elevators, Inc. stated in their responses to the Request for Information Pursuant to

Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that Garvey utilized a liquid mixture of carbon tetrachloride, and carbon disulfide as a grain fumigant from 1959-1985 (EPA, 2003a). This fumigant mixture is commonly referred to as 80-20 fumigant. Some formulations of the 80-20 fumigant may also have contained a minor amount of ethylene dibromide (EDB).

As discussed in the RI (Section 1.4.2), in 1960, Garvey Elevators, Inc., installed an approximately 3,000-gallon aboveground storage tank (AST) to the north of the silos to store the liquid fumigant. The fumigant was piped from the AST up to the grain gallery via an underground pipe that exited the subsurface and extended up the north side of the silos to the gallery. Fumigant was applied from the top of the elevator gallery (HGL, 2008). According to one background document in the project file, a buried portion of this delivery pipe was found to be leaking and was replaced sometime before 1986 when the tank was removed (ENSR, 2005). However, during the 2008 interviews conducted by EPA and HGL, none of the five former employees of Garvey Elevators interviewed could recall replacement of broken piping. However, four of the five interviewees stated that the fittings had leaks, or that staining was observed around the tank (HGL, 2008). The grain storage facility ceased use of the liquid fumigant in 1985.

1.1.1.3 Site Contaminants

Garvey Elevators was first identified as a source of carbon tetrachloride contamination in 1994 when a water sample collected during a Phase I Environmental Site Assessment (ESA) revealed the presence of carbon tetrachloride at 199 micrograms per liter (μg/L) in a water supply well located on the grain storage facility (Terracon, 1994). This concentration exceeded the EPA Maximum Contaminant Level (MCL) of 5 μg/L. The ESA was conducted at the behest of AGP as part of their due diligence procedures prior to purchasing the Garvey Elevators property. Garvey Elevators subsequently conducted several environmental investigations in the vicinity of the grain storage facility to determine the occurrence of carbon tetrachloride in soils and groundwater near the elevator, evaluate remedial alternatives, and estimate the costs of the Remedial Action (RA). Chemicals of potential concern (COPCs) listed in the *Final Interim Data Summary* include carbon disulfide, EDB, and the degradation compounds of carbon tetrachloride (HGL 2009). Neither carbon disulfide nor EDB were detected above their preliminary remediation goals (PRGs) during the RI.

From 1994 through 2007, Garvey installed 47 groundwater monitoring wells and completed numerous soil and soil gas sample borings. Previous investigations at the site are discussed in Section 1.5. In 1999, Garvey installed a soil vapor extraction (SVE) system and Groundwater Extraction and Treatment (GET) system in response to the soil and groundwater contamination. Garvey also began sampling residential and business wells, and providing alternative water supplies for wells impacted by the carbon tetrachloride released from the grain storage facility into groundwater.

1.1.1.4 Environmental Setting

As shown on Figure 1.4, the majority of the site consists of agricultural land and buildings. A small wooded area occupies approximately three acres of the south-central portion of the property, and drainage ditches are found along the railroad tracks on the eastern boundary of the property. An area which contains standing water during times of higher rainfall is located in the south-central portion of the property. The property is bounded by railroad tracks and agricultural fields. The local drainage basin consists of gently rolling loess plains and small meandering streams that occupy wide shallow valleys.

1.1.1.5 On-Site Habitat

A visit was conducted on October 22, 2009, to assess the current habitat for ecological receptors that may be present on the site. To document the on-site environmental conditions, the environmental checklist presented in Appendix B of the *Representative Sampling Guidance Document, Volume 3: Ecological* (EPA, 1997b) was completed. The completed checklist can be found in Attachment 1.

The property consists primarily of agricultural land, with a small wooded area. The wooded area is approximately 3 acres in size, and is dominated by cottonwood (*Populus deltoides*) and mulberry trees (*Morus rubra*). Drainage ditches surround the property. These ditches contain stormwater intermittently. Based on the intermittent presence of water, the ditches do not provide aquatic habitat. As noted above, there is an area that retains standing water during wet times of year on the property. This ponding of water serves only as an intermittent retention pool for rainwater during large rain events, so it does not provide perennial aquatic habitat. Based on this information, the property provides terrestrial habitat, the quality of which is limited by the agricultural use of most of the acreage.

1.1.2 Contaminant Fate and Transport

This section summarizes the potential contaminant fate and transport pathways for the site. A detailed discussion of contaminant fate and transport is presented in Section 6 of the RI Report for the Site.

The site is relatively flat, with a slight slope to the south and west from the area of the elevator buildings into agricultural fields. Drainage swales along the western and southern portions of the grain storage facility drain to the agricultural fields to the west and south. Surface runoff from the central and eastern portions of the grain storage facility operational area drains to a drainage ditches running parallel to the railroad track and siding. Runoff from agricultural fields directly to the east and south also drain to the ditches along the railroad track (Figure 1.3). Depth to groundwater is 115 feet. Because the groundwater does not discharge to any surface water feature, the groundwater-to-surface water discharge pathway is not a complete migration pathway for this site.

Carbon tetrachloride and its daughter products are the primary contaminants associated with historical site operations. The potential source areas for the site include:

- Former liquid fumigant AST that held the 80-20 fumigant.
- Grain elevator silos where the grain was stored to which the fumigant was applied.
- Flat storage building where treated grain was stored.
- Steel grain bins where fumigant may have been used to kill insect infestations.
- Railroad spur and construction debris disposal pit where railroad cars were treated with fumigant and construction debris and cleaning fluids were disposed.
- Fumigant-applicator wash area where fumigant and herbicide applicators and equipment were cleaned.

Potential release mechanisms are discussed in Section 6 of the RI Report. The data indicate limited presence of site-related contaminants in the surface soil or near surface soil. Chloroform was detected in the surface soil, but carbon tetrachloride was not detected in either surface soil samples or near-surface soil samples. As discussed in Section 6.1 of the RI, carbon tetrachloride and its degradation compounds are halogenated volatile organic compounds (VOCs). These compounds are soluble and have relatively low organic carbon partition coefficients, indicating that they would tend to leach vertically to the underlying groundwater rather than migrate on eroded soil particles. A release at the ground surface, as has occurred at this site, can therefore lead to long-term contamination of both the unsaturated and saturated zones. However, it is unlikely that carbon tetrachloride and its daughter products would migrate far across the ground surface. Chlorinated solvents are volatile, indicating that they will produce vapor phase contamination in unsaturated media, and tend to volatize readily into the air at the ground's surface.

Several pesticides were detected in samples collected from the drainage ditch, but not in surface soil or near surface soil samples collected at or near the potential source areas. Pesticides are both hydrophobic and nonvolatile (see Section 6.2 of the RI). Based on their tendency to associate with the soil matrix, pesticides exhibited limited leaching potential. These chemicals would tend to migrate on eroded soil particles. There is no evidence that pesticides were released by the historical grain elevator operations. As stated above, the pesticides were found only in the samples collected from the drainage ditches. These ditches receive runoff from adjacent cropland. Based on the apparent absence of pesticide contamination near the grain elevator structures, it is hypothesized that the pesticides found in the drainage ditch samples reflect runoff from the adjacent cropland.

Similar to the pesticides, several polynuclear aromatic hydrocarbons (PAHs) were detected in samples collected from the drainage ditch, but were not detected in the samples collected at the potential source areas. PAHs are hydrophobic: they tend to associate with soil particles and migrate on eroded soil as opposed to leach vertically to the underlying groundwater. PAHs are often found in asphalt and petroleum products. An asphalt pad is located just to the south of SD-10, where the PAHs were detected. Also, SD-10 was collected nearby the railspur and track switches where visual evidence of petroleum lubricants was observed. One of these two features is likely the source of the PAHs, as discussed in Section 5.1.1.4 of the RI Report.

One PCB was detected in surface soil. Arochlor 1248 was detected at a low spot between the north-south grain bins and the transformer pad on the south side of the main silos. As discussed in Section 5.3.1.2 of the RI, the transformer pad is the likely source. The strong adsorptive tendencies of PCBs suggest that it will remain bound to soils and sediment and is not expected to migrate in the dissolved phase.

Under anaerobic conditions, carbon tetrachloride can degrade to methane. This process results in the formation of the daughter products chloroform, methylene chloride, and chloromethane. The pesticides and PAHs are resistant to microbial degradation. These hydrophobic compounds tend to bioaccumulate, and thus have the potential to pose a threat to ecological receptors via the food web. VOCs, on other hand, generally do not bioaccumulate.

The mechanisms by which contaminants can potentially migrate from the source area and affect other media are illustrated on Figure 1.6.

1.1.3 Ecotoxicity and Potential Receptors

1.1.3.1 Ecotoxicity

VOCs, semi-volatile organic compounds (SVOCs), and pesticides are the broad categories of contaminants found at the site. The ecotoxicity of the detected chemicals is summarized below.

2-Butanone

2-Butanone is a manufactured chemical but it is also present in the environment from natural sources. 2-Butanone is produced in large quantities. Nearly half of its use is in paints and other coatings because it will quickly evaporate into the air and it dissolves many substances. It is also used in glues and as a cleaning agent. 2-Butanone occurs as a natural product. It is made by some trees and found in some fruits and vegetables in small amounts. It is also released to the air from car and truck exhausts. 2-Butanone is expected to rapidly volatilize from surface water and moist or dry soils to the atmosphere, In the atmosphere, this compound is expected to exist predominantly in the vapor phase. Wet deposition may return 2-butanone to the earth's surface. In soil, 2-butanone is expected to display very high mobility, and it has the potential to leach into groundwater. This characteristic also suggests that it does not significantly adsorb to sediment and suspended organic matter in surface waters. 2-Butanone is not expected to bioconcentrate in fish and aquatic organisms (ATSDR, 1997a). 2-Butanone is also a common lab contaminant, as discussed in Section 5.1.2.3 of the RI.

Acetone

Acetone is a manufactured chemical that is also found naturally in the environment. It evaporates easily, is flammable, and dissolves in water. Acetone is used to make plastic, fibers, drugs, and other chemicals. It is also used to dissolve other substances. It occurs naturally in plants, trees, volcanic gases, forest fires, and as a product of the breakdown of body fat. It is present in vehicle exhaust, tobacco smoke, and landfill sites. Industrial processes contribute more acetone to the environment than natural processes. Acetone does not bioconcentrate in aquatic organisms, and there is no data on acetone biomagnification in aquatic and terrestrial food chains. Biodegradation is the most important degradative process for acetone in sediment and soil. The important transport processes of acetone in soil are volatilization to the atmosphere and leaching into groundwater (ATSDR, 1994a). Acetone is also a common lab contaminant, as discussed in Section 5.1.2.3 of the RI.

Chloroform

Chloroform is both a synthetic and naturally occurring compound, although anthropogenic sources are responsible for most of the chloroform in the environment. Chloroform is released into the environment as a result of its manufacture and use; its formation in the chlorination of drinking water, municipal and industrial waste water, and swimming pool and spa water; and from other water treatment processes involving chlorination. Under anaerobic conditions, some bacteria can dehalogenate carbon tetrachloride to release chloroform. Most of the chloroform released into the environment will eventually enter the atmosphere. Based upon a vapor pressure of 159 millimeters mercury (mm Hg) at 20 degrees Celcius (°C), chloroform is expected to exist almost entirely in the vapor phase in the atmosphere. Large amounts of chloroform in the atmosphere may be removed by wet deposition since chloroform has significant solubility in water. This is confirmed by its detection in rainwater. Most of the chloroform removed in precipitation, however, is likely to reenter the atmosphere by volatilization. Trace amounts of chloroform have been documented in air samples from remote, often relatively pristine, areas of the world. Since chloroform is relatively nonreactive in the atmosphere, long-range transport within the atmosphere is possible (ATSDR, 1997b).

Toluene

Nearly all toluene entering the environment is released directly to air. The largest source of emissions is gasoline, which typically contains 5–7% toluene by weight. In 1978, air emissions associated with gasoline use were estimated to be 1.5 billion pounds (6.8x105 metric tons), the bulk of this (6.4x105 metric tons) was released through automobile exhaust. Toluene used in paints, solvents, adhesives, inks, and similar products is also released to air upon use. Release of toluene to land may occur in association with gasoline spills, leaking underground gasoline storage tanks, or land disposal of municipal sludges or refinery wastes. Although, in some cases, releases might be significant on a local scale, the total amount of toluene released to the environment in soil is considered to be negligible. Based on its lipophilic properties, toluene is expected to have a low tendency to bioconcentrate in the fatty tissues of aquatic organisms. Metabolism of toluene limits its tendency to biomagnify in the food chain (ATSDR, 2000a).

Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are released to the environment through natural and synthetic sources with emissions largely to the atmosphere. Natural sources include emissions from volcanoes and forest fires. Synthetic sources provide a much greater release volume than natural sources; the largest single source is the burning of wood in homes. Automobile and truck emissions are also major sources of PAHs. Environmental tobacco smoke, unvented radiant and convective kerosene space heaters, and gas cooking and heating appliances may be significant sources of PAHs in indoor air. Hazardous waste sites can be concentrated sources of PAHs on a local scale. Although PAHs are accumulated in terrestrial and aquatic plants, fish, and invertebrates, many animals are able to metabolize and eliminate these compounds (ATSDR, 1995).

Chlordane

Chlordane is an insecticide formerly used to treat field crops (especially corn) and other types of vegetation and to control termites. As such, it was intentionally applied to soils both in agricultural and urban settings. Chlordane is extremely persistent in the environment. In some soils it may persist for more than 20 years. Volatilization appears to be the only major removal mechanism from soil. However, at waste sites that contain high levels of organic solvents, leaching to groundwater may occur. Adsorption to sediments and volatilization are important removal mechanisms in water. In air, chlordane exists predominantly in the vapor phase. Chlordane will bioconcentrate in both marine and fresh water species, as well as bacteria (ATSDR, 1994b).

Dieldrin

Past agricultural uses of dieldrin have resulted in persisting soil residues and uptake in a wide range of crops. Dieldrin persists because it is more resistant to biotransformation and abiotic degradation than aldrin. As a result, it is found in all environmental media, even at a distance from the site of concentration. Dieldrin bioconcentrates and biomagnifies through the terrestrial and aquatic food chains. Transport of aldrin and dieldrin in soils is minimal because these compounds tend to bind tightly to soil. Based on their physical properties, volatilization from moist soil surfaces is expected. Most dieldrin and aldrin found in surface water are the result of runoff from contaminated soil. Aldrin undergoes photolysis to dieldrin, which in turn may be degraded by ultraviolet radiation or microbial action into the more persistent compound, photo dieldrin (ATSDR, 2002a).

DDT and Metabolites

DDT and its primary metabolites, DDE and DDD, are manufactured chemicals and are not known to occur naturally in the environment. Historically, DDT was released to the environment during its production, formulation, and extensive use as a pesticide in agriculture and vector control applications. DDD was also used as a pesticide, but to a far lesser extent than was DDT. The dominant fate processes in the aquatic environment are volatilization and adsorption to biota, suspended particulate matter, and sediments. Transformation includes biotransformation and photolysis in surface waters. When deposited on soil, DDT, DDE, and DDD are strongly adsorbed. However, they may also revolatilize into the air, which is more likely to occur from moist soils than dry soils. They may photodegrade on the soil surface and biodegrade. DDT bioconcentrates in aquatic organisms and bioaccumulates in the food chain (ATSDR, 2002b).

Heptachlor Epoxide

Heptachlor was used extensively until the 1970s as a broad-spectrum insecticide on a wide variety of agricultural crops, with the major use on corn. It also had nonagricultural uses including seed treatment, home and garden uses, and termite control. Heptachlor is converted to heptachlor epoxide and other degradation products in the environment. Heptachlor epoxide degrades more slowly and, as a result, is more persistent than heptachlor. Heptachlor epoxide has been found in food crops grown in soils treated with heptachlor many years before. Both heptachlor and heptachlor epoxide adsorb strongly to sediments, and both are bioconcentrated in aquatic and terrestrial organisms. Biomagnification of heptachlor and heptachlor epoxide in aquatic food chains is significant. Because heptachlor is readily metabolized to heptachlor epoxide by higher trophic level organisms, biomagnification of heptachlor itself is not significant. Because of the more persistent nature of heptachlor epoxide and its lipophilicity, biomagnification of heptachlor epoxide in terrestrial food chains is significant (ATSDR, 2007).

Polychlorinated Biphenyls (PCBs)

PCBs enter the atmosphere from volatilization from both soil and water surfaces. Once in the atmosphere, PCBs are present both in the vapor phase and sorbed to particles. The dominant source of PCBs to surface waters is atmospheric deposition; however, redissolution of sediment-bound PCBs also accounts for water concentrations. Currently, the environmental cycling process involving deposition of atmospheric PCBs is expected to be the major source of surface soil contamination. Since PCBs are no longer produced in the United States, accidental leaks and spills from old transformers and capacitors containing PCBs and releases from containers in landfills and hazardous waste sites may be sources of PCBs in soil. Accidental spills of PCBs during transportation of electrical transformers and other PCB-containing equipment; vehicular emissions may also be sources of PCBs in soils. Bioconcentration is defined as uptake of a chemical from water alone; and bioaccumulation is the result of combined uptake via food, sediment, and water. PCBs accumulate in terrestrial vegetation by the following possible mechanisms: (1) uptake from soil through the roots; (2) dry deposition on aerial parts (particle-bound or gaseous); and (3) wet deposition on aerial parts (particle-bound or solute). The primary mode of uptake for total PCBs in terrestrial vegetation is by vapor-to-plant transfer (ATSDR, 2000).

1.1.3.2 Evaluation of Potential Habitats, Sensitive Environments, and Receptors

An evaluation of on-site habitat was conducted on October 22, 2009. EPA's Appendix A Checklist for Ecological Assessment/Sampling was completed during the evaluation (Attachment 1). The majority of the property consists of agricultural land and buildings. A small, wooded area was noted to provide habitat to and was observed to contain birds and small mammals. The wildlife observed on the property are listed in Table 1 of Attachment 1. The wooded area is approximately 3 acres in size, and is dominated by cottonwood (*Populus deltoides*) and mulberry trees (*Morus rubra*). The drainage ditches around the property carry only stormwater and the water retention area only contains water during the rainy season. As such, both ditches and the ponding area contain water only intermittently. Based on the limited presence of water, the ditches and ponding area are not identified as aquatic habitat.

There are no sensitive environments at the site. Southeast of the property lies a potential wetland area, as identified by the Nebraska Department of Natural Resources (NDNR) and as shown on the National Wetland Inventory map (see Figure 1.7). This area, however, is far enough from the site that it is unlikely surface soil contaminants would reach it. Furthermore, it is not plausible that the contaminated groundwater from the site would discharge to this wetland because the surface of the groundwater is 110 feet below grade. Indeed, due to the depth to groundwater, no surface water discharge pathway has been identified for the plume.

The Nebraska Games and Parks Commission (NGPC) and the United States Fisheries and Wildlife Service (USFWS) were contacted by HGL on October 8, 2010, to determine whether any state-listed threatened or endangered species or their habitats were present on or around the project site.

A response from the USFWS was received dated November 9, 2010. Their letter stated that the only federally listed endangered species that could occur near the Garvey Elevator Superfund Site is the whooping crane, which migrates through the area. However, USFWS goes on to say that "…there are no recent confirmed sightings of whooping cranes within half a mile of the proposed project site", and that "the project will not likely impact the whooping crane".

Furthermore, the USFWS stated that, under the Bald and Golden Eagle Protection Act: "[a]ccording to our records there are no active bald eagle nests located within or near the proposed project area."

A response from the NGPC was received dated November 17, 2010. Their letter stated that the only federally listed endangered species that could occur near the Garvey Elevator Superfund Site is the whooping crane, but "there does not appear to be suitable roosting habitat for cranes within the investigation area". A copy of these documents can be found in Attachment 2. Based on this information, no threatened or endangered species are expected to be threatened by site activities.

Due to the lack of perennial water at the site, the primary ecological receptors are expected to be terrestrial.

1.1.4 Evaluation of Exposure Pathways

This section identifies the potentially complete pathways by which ecological receptors could be exposed to site-related contamination. The conceptual site model (CSM) is shown graphically in Figure 1.6.

1.1.4.1 Sediment

As stated in Section 1.1.3.2, the drainage ditch on the eastern and northern boundaries of the property does not represent aquatic habitat due to the limited presence of water. Samples collected from within and near the ditch were pooled with the surface soil data for this SLERA.

1.1.4.2 Surface Water

Surface water features are intermittent on the property. Surface water is present on the property only after large rain events, and is not considered to provide a pathway by which aquatic receptors could be exposed to site contaminants. Due to the limited presence of surface water, no surface water samples have been collected during the site investigation.

1.1.4.3 Soil

Under current site conditions, terrestrial receptors could be exposed to contaminants in the surface soil outside of the current building footprints. In the future, if the buildings and foundations were removed, terrestrial receptors could be exposed to contaminants present in the soil beneath the buildings. Plants, soil invertebrates, mammals, and birds could be exposed directly to the soil contaminants. In addition, mammals and birds could be exposed indirectly to the soil contaminants via consumption of food items (plants, invertebrates, small mammals) that have accumulated soil contaminants within their tissues.

1.1.5 Assessment and Measurement Endpoints

The last step of the problem formulation includes the selection of assessment and measurement endpoints. Based on the habitat and the identification of surface soil as the only potentially contaminated medium to which ecological receptors may be exposed, successful survival, growth and reproduction at the population level for eight receptor groups have been identified as assessment endpoints.

Each assessment endpoint and corresponding representative species or community is described in the following subsections. Figure 1.4 shows the habitat that is available at the site.

1.1.5.1 Growth, Survival, and Reproduction of Terrestrial Plant Communities

Plants provide food, cover, and nesting material for many animals. The soil at the site will support fewer birds and mammals if chemical concentrations are limiting the growth, survival, and reproduction of plants. The current terrestrial plant community at the site primarily consists of agricultural plants. The wooded area in the south central portion of the property does offer some habitat and is a food source for birds and mammals in the way of trees, shrubs, and grasses, but because of its distance from the source areas, no contamination is found in this area.

1.1.5.2 Growth, Survival, and Reproduction of Soil Invertebrate Communities

Soil invertebrates, such as earthworms, promote soil fertility by breaking down organic matter and releasing nutrients. Invertebrates also improve aeration, drainage, and aggregation of soil, and serve as a forage base for many terrestrial species. The soil at the site will support fewer insectivorous birds and mammals if chemical concentrations are limiting the growth, survival, and reproduction of soil invertebrate communities.

1.1.5.3 Growth, Survival, and Reproduction of Mammalian Terrestrial Herbivores

These receptors are second-order consumers and are susceptible to exposure to bioaccumulative chemicals. In some habitats, small mammals such as the meadow vole, tend to favor disturbed areas over other available habitat, although they are also commonly found in climax (old-growth) associations. Because agricultural land dominates the site, herbivores could utilize the site as habitat. The meadow vole (*Microtus pennsylvanicus*) was chosen to represent this endpoint.

1.1.5.4 Growth, Survival, and Reproduction of Mammalian Terrestrial Insectivores

These receptors are second-order consumers and are susceptible to exposure to bioaccumulative chemicals. The short-tailed shrew (*Blarina brevicauda*) was chosen to represent this endpoint. The short-tailed shrew primarily consumes various kinds of plants and insects, with a small incidental consumption of tiny birds and mammals. As with terrestrial herbivores, the agricultural land and wooded area of the site mean that insectivores could utilize the site as habitat.

1.1.5.5 Growth, Survival, and Reproduction of Mammalian Terrestrial Carnivores

Because these receptors are top-level consumers, they are susceptible to bioaccumulative chemicals, especially those that have the potential to biomagnify through terrestrial food chains. The long-tailed weasel (*Mustella frenata*) was chosen to represent this endpoint. The diet of a weasel typically consists of various small mammals such as mice, shrews, and voles and could potentially include small birds, such as fledglings.

1.1.5.6 Growth, Survival, and Reproduction of Avian Terrestrial Herbivores

These receptors are second-order consumers and are susceptible to exposure to bioaccumulative chemicals. Mourning dove (*Zenaida macroura*) prefer open hardwood forests and southern pine forests, as well as grasslands, pastures, meadows, and agricultural land with gravely areas. The mourning dove inhabits farm yards, grassy meadows, cultivated fields, suburbs, and towns. Although the mourning dove was not observed at the site, site conditions exist at the site that would provide habitat. Therefore, the mourning dove was chosen to represent this endpoint. Mourning doves primarily eat plant seeds.

1.1.5.7 Growth, Survival, and Reproduction of Avian Terrestrial Insectivores

These receptors are second-order consumers, and are thus susceptible to exposure to bioaccumulative chemicals. They consume insects or other soil invertebrates, and may also have significant direct contact with soil while foraging. The American woodcock (*Scolopax minor*) was chosen to represent this assessment endpoint. The American woodcock lives in a variety of habitats, including moist woodlands and thickets. American woodcocks forage along the ground for ground-dwelling invertebrates. Earthworms constitute the majority of the diet of the juvenile woodcocks while growing in the nest.

1.1.5.8 Growth, Survival, and Reproduction of Avian Terrestrial Carnivores

These receptors are top-level predators and are susceptible to bioaccumulative chemicals, especially those that have the potential to biomagnify through terrestrial food chains. The Red-tailed hawk (*Buteo jamaicensis*) was chosen to represent this endpoint. The Red-tailed hawk occupies a wide variety of open to semi-open habitats, including farmland and urban areas from sea level up to 13,000 feet elevation. They generally occur in any habitat that contains an adequate prey base (insects, reptiles, and small mammals), perch sites, and (during the nesting season) nesting sites.

Although reptiles may be present at the site, they were not selected as measurement endpoints for the site. Both data and methods to estimate exposure and to evaluate toxicity to reptiles are limited. As a consequence, reptiles are assumed to be protected if other vertebrate wildlife assessment endpoints are protected.

As described in Section 1.1.3.2, threatened or endangered species are not expected to visit the site. Accordingly, no threatened or endangered species has been identified as an assessment and measurement endpoint.

1.2 DATA USED IN THE SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

As described in Section 1.1.4, sediment in the drainage ditches and surface soil were identified as potential exposure media for ecological receptors. The top two feet of soil is generally considered the active zone for terrestrial receptors. For this reason, the SLERA data set consists of all soil samples collected between 0 and 2 feet below ground surface (bgs) during the RI. The data were reviewed to assess the presence of localized contamination. Because the surface soil data did not exhibit a pattern or trend to chemical distribution, all the sample results were used for the SLERA. Because the sediment is seldom inundated, this medium was treated as a surface soil for the purposes of the SLERA. The sediment data also showed no pattern with respect to contaminant distribution. Accordingly, all sediment data were included in the SLERA. The surface soil and sediment data were pooled into a single data set. The soil and sediment samples were analyzed for VOCs, SVOCs, and pesticides/PCBs. Samples were not analyzed for metals based on historical site use. Figure 1.8 and Table 1.1 present the sample locations and analytical data used for the SLERA.

1.3 INITIAL SCREENING

The initial screening is a conservative evaluation in which the maximum concentration in a particular medium is compared to benchmark values for a target community (e.g., soil invertebrates) or is used to estimate the chemical consumption rate for comparison to no observed adverse effects levels (NOAELs) for mammals and birds. For this initial screening, maximum detected concentrations or, for analytes that were not detected, maximum sample quantitation

limits (SQLs), were compared to EPA Ecological Soil Screening Levels (Eco-SSLs), if available. If an Eco-SSL were not available, then benchmark values were obtained from Toxicological Benchmarks for Plants (Oak Ridge National Laboratory (ORNL), 1997a), Toxicological Benchmarks for Soil Invertebrates (ORNL, 1997b), Attachment 1-1 of EPA's Guidance for the Development of Ecological Soil Screening Levels (EPA, 2005), and EPA Region 5 Ecological Screening Values. Chemicals identified as bioaccumulative in EPA's Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment: Status and Needs (EPA, 2000, Table 4-2) were included in the food web analysis unless the maximum detection or, for non-detect analytes, the maximum SQL was less than the mammalian and avian Eco-SSL.
Food web exposure for wildlife is expressed in terms of dietary doses. These dietary doses are estimated based on models that integrate species-specific life history attributes and chemical-specific bioaccumulation relationships. The total chemical exposure, or daily dose, estimated by these models is compared to NOAELs to identify chemicals requiring further evaluation.

The ingestion of chemicals in the soil by wildlife receptors was estimated using the following equation:

$$E_j = \left[Soil_j \times P_s \times FIR\right] + \left[\sum_{i=1}^{N} B_{ij} \times P_i \times FIR\right]$$

Where:

E_j	=	total exposure (mg/kg/d)
$Soil_j$	=	concentration of chemical (j) in soil (mg/kg)
P_s	=	soil ingestion rate as proportion of diet
FIR	=	species-specific food ingestion rate (kg food/kg body weight/d)
B_{ij}	=	concentration of chemical (j) in biota type (i) (mg/kg)
P_i	=	proportion of biota type (i) in diet

The estimated exposure was then divided by the NOAEL to calculate the NOAEL-based hazard quotient (HQ). All calculations were performed on a dry weight basis.

The specific life history parameters required to estimate exposure of each receptor to chemicals in the site soil include food ingestion rate normalized to body weight, dietary components and percentage of the overall diet represented by each major food type, and approximate amount of soil that may be incidentally ingested based on feeding habits. The values used for these parameters are presented in Table 1.4. For the initial screening, it was assumed that the ecological receptors would be exposed to the maximum soil concentration, that the receptor would consume food only from the site, and that all of the chemicals associated with the soil are bioavailable. These assumptions are very conservative.

A critical component for the exposure estimate is the chemical concentration assumed for the dietary items. Because no site-specific data were available, it was necessary to estimate dietary concentrations based on values in the literature. Dietary items for which tissue concentrations were estimated include terrestrial plants, soil invertebrates (earthworms), and small mammals.

The methodologies used for these tissue calculations are outlined below. Default factors of 1.0 were used only when suitable bioaccumulation data were unavailable.

Plant Bioaccumulation: The plant bioaccumulation factors (BAFs) used in the calculations are presented in Table 1.3. Soil-to-plant BAFs were obtained from EPA's Guidance for Developing Ecological Soil Screening Levels, Attachment 4-1 (EPA, 2007a). If BAFs were not available from this document, BAFs were calculated in accordance with EPA (2007a).

Bioaccumulation by Earthworms: The earthworm BAFs used in the calculations are presented in Table 1.3. Earthworm BAFs were obtained from EPA's Guidance for Developing Ecological Soil Screening Levels (EPA, 2007a). If BAFs were not available from this document, BAFs were calculated in accordance with EPA (2007a).

Ingestion of Small Mammals: The small mammal BAFs used in the calculations are presented in Table 1.4. For a limited number of chemicals, BAFs were obtained from EPA's Guidance for Developing Ecological Soil Screening Levels (EPA, 2007a). For chemicals without soil-to-small mammal BAF values, a BAF of 1 was assumed (EPA, 2007a).

NOAELs: If available, NOAELs were obtained from the Eco-SSL documents, otherwise they were obtained from Toxicological Benchmarks for Wildlife: 1996 Revision (ORNL, 1996).

1.3.1 Analytes With Eco-SSLs

Eco-SSLs are available for a limited number of chemicals. The analytical results are compared to Eco-SSLs in Table 1.5. The results of this comparison are presented below.

In the current Eco-SSL document (EPA, 2007b), PAH effects are evaluated in terms of the combined low molecular weight PAH concentration and the combined high molecular weight PAH concentration. The low molecular weight PAHs are defined in the document as compounds with fewer than four rings in their molecular structure. High molecular weight PAHs are defined as having four or more rings in their molecular structure.

Pentachlorophenol

Pentachlorophenol was not detected in any samples. The maximum SQL was less than all four Eco-SSLs, indicating that pentachlorophenol would not pose an ecological threat if it were present in the soil at concentrations below the analytical sensitivity.

Low Molecular Weight PAHs

Low molecular weight PAHs were not detected in soil or sediment samples. The combined SQL was calculated by summing the maximum SQLs for acenaphthene, acenaphthylene, anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, and phenanthrene. The resulting concentration was below the Eco-SSLs for terrestrial invertebrates and mammals. No screening values were given for plants or birds. Anthracene EC_{50} values of 30 milligrams per kilogram (mg/kg) and 720 mg/kg were observed for oats and cucumbers by Mitchell, et al (1988) (as cited in WHO, 1998a), while soy bean, heath barksia, yellow bloodwood, and sheoak showed no effects up to 1,000 mg/kg. The sum of the maximum SQLs, 3.04 mg/kg, is less than these effects concentrations, indicating that, if present, low molecular weight PAHs would not pose a threat to the plant community. Due to the lack of avian Eco-SSLs, exposure of birds to low molecular weight PAHs was included in the initial screening food web analysis.

High Molecular Weight PAHs

To calculate the high molecular weight PAH concentration, the maximum concentrations of the detected PAHs and the maximum SQLs of the non-detected PAHs were added. This sum, 2.97 mg/kg, was less than the Eco-SSL for terrestrial invertebrates, but greater than the Eco-SSL for mammals. Based on this exceedance, high molecular weight PAHs were retained for the refined food web analysis with respect to mammals.

No screening values were given for plants or birds. Sverdrup, et al (2007) developed a no observed effects concentration (NOEC) for plants of 69 mg/kg for benzo(a)pyrene. Based on the observation that the maximum estimated high molecular weight PAH concentration is less than this NOEC, high molecular weight PAHs appear to pose minimal threat to plants. Due to a lack of screening values, exposure of birds to high molecular weight PAHs was included in the initial screening food web analysis.

Dieldrin

The maximum dieldrin concentration was greater than the Eco-SSLs for mammals, but less than the value for birds. No terrestrial plant or soil invertebrate Eco-SSLs for this compound were available. The Eco-SSL document for dieldrin (EPA, 2007c) did list several plant studies. These studies investigated the growth of low, medium, and high vigor seeds for corn, soybeans, and wheat. For low vigor seeds, maximum acceptable toxicant concentrations (MATCs) ranging from 7.1 mg/kg to 34.6 mg/kg were derived. These MATCs are orders of magnitude greater than the maximum detection of 0.013 mg/kg, suggesting that the dieldrin contamination would not pose a threat to terrestrial plants. Minimal information concerning the toxicity of dieldrin towards soil invertebrates could be found. The available information suggests that dieldrin is toxic to earthworms only at high application rates (http://www.uwex.edu/ces/wihort/turf/Earthworms.htm). Based on this information, dieldrin was not retained for further evaluation with respect to soil invertebrates. Dieldrin was retained for the refined food web analysis with respect to mammals.

DDT and Metabolites

The maximum combined concentration of DDD, DDE, and DDT was less than the Eco-SSLs for mammals and birds, indicating that these pesticides do not pose a threat via the food web. Eco-SSLs for plants and terrestrial invertebrates have not been developed. The Eco-SSL document for DDT and its metabolites (EPA, 2007d) identified one study eligible for use in development of a plant Eco-SSL. This study identified a MATC of 7.1 mg/kg. The maximum combined DDT/DDE/DDD concentration, 0.0082 mg/kg, is less than this MATC. According to the Environmental Health Criteria 83 (WHO, 1989), earthworms are insensitive to DDT and its metabolites at levels higher than those likely to be found in the environment (2,000 mg/kg was the concentration cited in one study). Based on this information, the DDT and metabolite concentrations observed at the site appear unlikely to pose a threat to plants or soil invertebrates.

In summary, based on the lack of avian Eco-SSLs, exposure of birds to low molecular weight PAHs and high molecular weight PAHs was included in the initial screening food web analysis. Evaluation of mammalian exposure to high molecular weight PAHs and dieldrin was retained for further evaluation in the refined food web analysis. Pentachlorophenol, DDT, and its metabolites are not identified as COPECs.

1.3.2 Analytes Without Eco-SSLs

Eco-SSLs have not been developed for the majority of the chemicals on the analyte list. To determine whether a chemical has the potential to affect soil invertebrates, terrestrial plants, or wildlife receptors which directly contact the soil, the maximum concentration or, for non-detect analytes, the maximum SQL, was screened against values obtained from other sources.

Soil benchmark concentrations were obtained from ORNL (ORNL, 1997a; ORNL, 1997b), the Netherlands Ministry of Housing, Spatial Planning, and the Environment (as reported in EPA, 2003b), Ontario Ministry of Environment and Energy (as reported in EPA, 2003b), Canadian Council of Ministers of the Environment (CCME) (as reported in EPA, 2003b), British Columbia Screening Levels (as reported in EPA, 2003b), and the EPA Region 5 Ecological Screening Values. This screening is presented in Table 1.6. Those chemicals with maximum detections or maximum SQLs greater than the screening values are discussed below.

Trichloroethene (TCE)
Trichloroethene was not detected in surface soil or sediment samples. The SQLs of 4.8 micrograms per kilogram (μg/kg) to 9.1 μg/kg were greater than the ecological benchmark value of 1 μg/kg. This benchmark represents the target value developed by the Netherlands. The target value is a conservative measure of protectiveness. Exceedance of this value does not necessarily indicate potential for ecological risk. EPA Region 5 has developed a benchmark value of 12,400 μg/kg for TCE based on a food web endpoint (EPA, 2003). In studies cited by CCME, trichloroethene EC_{50} values of 53 mg/kg and 37 mg/kg were observed for radishes and lettuce, and the 50% lethal concentration (LC_{50}) value for earthworms was observed at 106 mg/kg (2007). Because the SQL is well below these values, it is unlikely that TCE would be present at concentrations that could pose an ecological threat.

Vinyl Chloride
Vinyl chloride was not detected in surface soil or sediment samples. The SQLs, 4.8 μg/kg to 9.1 μg/kg, were greater than the benchmark value of 3 μg/kg developed by the Ontario Ministry of Environment and Energy (OMEE). The benchmark values developed by OMEE consider human health effects in addition to ecological. EPA Region 5 has developed a screening level of 646 μg/kg for vinyl chloride. The endpoint for this screening value is the insectivore. All SQLs are less than the EPA Region 5 screening value. In addition, the SQLs only slightly exceed the OMEE benchmark value. Even if vinyl chloride were present at the

site, based on comparison of the SQLs to different screening values it is unlikely that it would be present at levels that would pose a threat to ecological receptors.

2,4-Dichlorophenol

2,4-Dichlorophenol was not detected in any surface soil or sediment samples. The SQLs for this analyte were greater than the ecological benchmark value. 2,4-Dichlorophenol has been used for mothproofing, in the control of mites, and as an intermediate in the manufacture of herbicides (ATSDR, 1999a). This information indicates it is unlikely that historical operations at the Garvey Site would have resulted in a release of 2,4-dichlorophenol. Based on the absence of detections and the limited potential for the chemical to have been released at the site, 2,4-dichlorophenol is not identified as a COPEC.

2,4-Dimethylphenol

2,4-Dimethylphenol was not detected in surface soil or sediment samples. 2,4-Dimethylphenol is used as disinfectant/bacteriocide/germicide, fungicide and sanitizer against animal pathogenic bacteria on household premises, household contents (nursery), sickroom premises, bathroom premises, toilet bowls, diaper pails, and garbage containers (http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+4253). None of these uses is associated with historical site operations. Based on the absence of detections and limited potential for the chemical to have been released at the site, 2,4-dimethylphenol is not identified as a COPEC.

2,6-Dinitrotoluene

2,6-Dinitrotoluene was not detected in surface soil or sediment samples. Dinitrotoluene is used: in the production of TNT and of toluene diisocyanate; as a waterproofing, plasticizing, and gelatinizing agent in explosives; as an intermediate in the production of dyes; and as a modifier for smokeless powders (ATSDR, 1998). None of these uses is associated with historical site operations. Based on the absence of detections and limited potential for the chemical to have been released at the site, 2,6-dinitrotoluene is not identified as a COPEC for this site.

2-Chloronaphthalene

2-Chloronaphthalene was not detected in surface soil or sediment samples. Monochloronaphthalenes have been used in gauge fluids, instrument seals, heat exchange fluids, specialty solvents, engine crankcase additives, color dispersions, motor tune-up compounds, in the synthesis of dyes, and as a wood preservative (http://www.inchem.org/documents/cicads/cicads/cicad34.htm#4.0). Based on the uses of monochloronaphthalenes and its lack of detection in soil and sediment samples, it is unlikely that 2-chloronaphthalene was released to the site. Therefore, this chemical was not identified as a COPEC.

2-Chlorophenol

2-Chlorophenol was not detected in surface soil or sediment samples. Historically, monchlorophenols were used as antiseptics (ATSDR, 1999a). In addition, monochlorophenols are used in the synthesis of higher chlorinated phenols (ASTDR, 1999a). These uses are not associated with historical operations at the site. Based on the absence of detections and limited potential for release, 2-chlorophenol is not considered a COPEC.

2-Methylphenol and 4-Methylphenol

4-Methylphenol (p-cresol) and 2-methylphenol (o-cresol) were not detected in any soil or sediment samples. Cresols are a naturally occurring and manufactured group of chemicals with a multitude of uses, including the formulation of antioxidants, the manufacture of herbicides and pesticides, and the manufacture of pharmaceuticals (ATSDR, 2008a). None of the anthropogenic uses of cresols, as listed in the ATSDR Toxicological Profile (ATSDR, 2008a), are associated with fumigant operations at grain elevators. Although cresols are common in the environment, they are usually present at low concentrations because they rapidly degrade. For example, the half-life of cresols in soil is about 1 week under aerobic conditions (ATSDR, 2008a). Based on the short half-life, absence of detections, natural occurrence, and limited potential to have been related to historical operations, cresols are not identified as COPECs.

2-Nitrophenol

2-Nitrophenol was not detected in surface soil or sediment samples. 2-Nitrophenol is used as an intermediate in the production of a number of chemicals, including rubber chemicals, dyes, pigments, and fungicides (ATSDR, 1992). None of these activities would have occurred during historical site use. The soil benchmark concentration used for 2-nitrophenol was a British Columbia Agricultural Land Use value. In tests using earthworms, Broeker et al., and Koerdal et al, developed 28-day LC_{50} values of 250 to 500 mg/kg (as cited in WHO, 2000a). For plants, Broeker et al, and Koerdal et al also developed a 14-day effects concentration on 10% of the organisms (EC_{10}) of 10 mg/kg (as cited in WHO, 2000a). These concentrations are greater than the maximum SQL, indicating minimal potential for toxicity to lower trophic level receptors if the chemical were present at the site. Based on the absence of detections, limited potential for historical release, and the available toxicity information, 2-nitrophenol was not retained as a COPEC.

3,3’-Dichlorobenzidine

3,3’-Dichlorobenzidine was not detected in surface soil or sediment samples. The primary use of 3,3’-dichorobenzidine is as a pigment (ATSDR, 1998b). Other uses include compounding agent for rubber and plastics, an agent to test for the presence of gold, and in the manufacture of tetraminobiphenyl (ATSDR, 1998b). Based on these uses, it is unlikely that 3,3’dichlorobenzidine would have been released at the site. Accordingly, this chemical is not identified as a COPEC.

4,6-Dinitro-2-methylphenol

4,6-Dinitro-2-methylphenol was not detected in surface soil or sediment samples. The soil benchmark concentration was a British Columbia Agricultural Land Use value. A NOEC for the earthworm of 10 mg/kg was developed by van der Hoeven (as cited in WHO, 2000b). The maximum SQL, 1.9 mg/kg, is less than this NOEC, indicating minimal potential for 4,6-

dinitro-2-methylphenol to affect soil invertebrates even if the chemical were present at the site. Uses of 4,6-dinitro-2-methylphenol include as an insecticide and herbicide, primarily in orchards and on grapes (WHO, 2000b). The chemical is also applied to potatoes. The chemical is also used in the manufacture of plastics, fungicides, dyes, and pharmaceuticals (WHO, 2000b). It is unlikely that historical fumigant operations would have released 4,6-dinitro-2-methylphenol. In addition, the cropland surrounding the site is used for grain production, not for fruit crops or potatoes. Based on the absence of detections, the available ecotoxicity data, and the limited potential for historical release, 4,6-dinitro-2-methylpheno is not identified as a COPEC.

4-Chloroaniline

4-Chloroaniline was not detected in surface soil or sediment samples. As cited in CICAD 48 (WHO, 2003), the EC_{50} value for oats was observed at 140 mg/kg and the value for turnips was 66.5 mg/kg, both of which are higher than the SQL of 1.9 mg/kg. The same source observes an LC_{50} value of 540 mg/kg for earthworms. Comparison of the maximum SQL to these toxicity values indicates minimal potential for toxicity to lower trophic level receptors if the chemical were present at the site. Uses of 4-chloroaniline include as an intermediate in the synthesis of herbicides, insecticides, azo dyes, pigments, pharmaceuticals, and cosmetics (WHO, 2003). Based on these uses, it is unlikely 4-chloroaniline would have been released at the site. Accordingly, this chemical is not identified as a COPEC.

Atrazine

Atrazine was not detected in surface soil or sediment samples. The maximum SQL was 4.2 times the ecological benchmark, which represents the target value developed by the Netherlands. The target value is a conservative measure of protectiveness. The LC_{50} value for mallard ducks was greater than 2,000 mg/kg and greater than 5,000 mg/kg for ring-necked pheasants and bobwhite quail (http://pmep.cce.cornell.edu/profiles/extoxnet/24d-captan/atrazine-ext.html). Comparison of the maximum SQL, 0.21 mg/kg, to these LC_{50} values suggests minimal potential for a threat to wildlife receptors. The same source states that atrazine is not toxic to bees. Based on the low ratio by which the maximum SQL exceeds the conservative benchmark, and comparison of the maximum SQL to the available toxicity information, atrazine is not identified as a COPEC.

Bis(2-Chloroethoxy)Methane

Bis(2-chloroethoxy)methane was not detected in surface soil or sediment samples. Only the maximum SQL was greater than the ecological benchmark. At fourteen locations, the SQL was less than the ecological benchmark. In addition, the maximum SQL was only 1.3 times the benchmark value. Based on the limited exceedance of the screening value, bis(2-chloroethoxy)methane is not identified as a COPEC.

Butylbenzylphthalate

Butylbenzylphthalate was not detected in surface soil or sediment samples. While the maximum SQL was greater than the screening value, several samples had SQLs that were less than the ecological benchmark. Benzyl butyl phthalate is a plasticizer used in PVC for vinyl floor tile, vinyl foams, and carpet backing, cellulose plastics, polyvinyl acetate, polysulfides, and polyurethane (WHO, 1999a). None of these uses is associated with historical site operations. Based on the absence of detections and the limited potential for release, butylbenzylphthalate is not identified as a COPEC.

Hexachlorobenzene

Hexachlorobenzene was not detected in surface soil or sediment samples. The Pesticide Properties DataBase (PPDB) maintained by the University of Hertfordshire (http://sitem.herts.ac.uk/aeru/projects/ppdb/index.htm) identifies a 14-day LC_{50} of 1,000 mg/kg for exposure of *Eisenia foetida* to hexachlorobenzene. This toxicity information indicates that hexachlorobenzene would not pose a threat to terrestrial invertebrates if it were actually present in the site soil. Based on historical use of hexachlorobenzene as a fungicide for various plant seeds (ATSDR, 2002c), it is unlikely that, if present, this chemical would pose a threat to the plant community. For these reasons, hexachlorobenzene is not identified as a COPEC for plants or invertebrates. As a bioaccumulative compound, hexachlorobenzene was included in the food web analysis.

B-BHC

B-BHC was not detected in surface soil or sediment samples. The maximum SQL was 2.1 times the soil target value developed by the Netherlands. EPA Region 5 has developed a screening level of 3.98 μg/kg based on effects to plants. All SQLs are less than the EPA Region 5 screening value. In addition, the SQLs only slightly exceed the RIVM benchmark value. Even if b-BHC were present at the site, based on comparison of the SQLs to different screening values it is unlikely that it would pose a threat to lower trophic level receptors. This pesticide is not identified as a COPEC for plants or invertebrates. As a bioaccumulative compound, b-BHC was included in the food web analysis.

Endrin

Endrin was not detected in surface soil or sediment samples. PPDB identifies a 14-day LC_{50} of 66 mg/kg for exposure of *Lumbricus terrestris* to endrin. The maximum SQL, 0.0094 m/kg, is substantially lower than this LC_{50} value, suggesting limited potential for endrin to affect soil invertebrates if this pesticide were indeed present. Endrin was applied to a number of different crops including, cotton, sugar cane, and grains (ATSDR, 1996). Given that its historical use was application to plant crops, it is unlikely that endrin would pose a threat to terrestrial plants if it were present at concentrations less than its maximum SQL of 0.0094 mg/kg. This pesticide is not identified as a COPEC for plants or invertebrates. As a bioaccumulative compound, endrin was included in the food web analysis.

Endrin Aldehyde

Endrin aldehyde was not detected in surface soil or sediment samples. Only the maximum SQL for endrin aldehyde was greater than its ecological benchmark. The endrin aldehyde SQLs for the remaining samples were less than the ecological benchmark. The maximum SQL exceeded the benchmark value by only a factor of 1.1. Based on the low ratio be which the maximum SQL exceeded the benchmark, and the observation that all other SQLs were less than the benchmark value, endrin aldehyde is not identified as a COPEC for lower trophic level receptors. As a bioaccumulative compound, endrin aldehyde was included in the food web analysis.

Toxaphene

Toxaphene was not detected in surface soil or sediment samples. The maximum SQL was 1.9 times the ecological benchmark of 0.119 mg/kg. Nine of the ten samples collected from the drainage ditch had a SQL less than or very slightly greater than (0.12 mg/kg vs 0.119 mg/kg) the ecological benchmark value, indicating that analysis of these samples was sufficiently sensitive to have identified the potential for an ecological threat. Based on the low ratio by which the maximum SQL exceeded the ecological benchmark, and the observation that the majority of the samples from the drainage ditch (the location with the greatest potential for toxaphene to be present through the transport of eroded soil) had SQLs approximately equal to or less than the ecological benchmark, toxaphene is not identified as a COPEC for lower trophic level receptors. Due to its status as an important bioaccumulative compound, toxaphene was included in the food web analysis.

In summary, all exceedances of the ecological benchmarks were associated with analytes not detected in any of the samples. Based on several lines of reasoning, including commercial use of the compounds, available ecotoxicity information, and the ratio by which the maximum SQLs exceed the screening values, it was determined that no COPECs should be identified on the basis of SQL comparison to ecological benchmarks.

Analytes Without Screening Values

Ecological screening values could not be found for methyl acetate and benzoic acid. Both of these compounds were detected at one location. Ecotoxicity information for exposure of terrestrial organisms to methyl acetate or benzoic acid could not be found. The single detection of methyl acetate was low: 0.0073 mg/kg. Based on use of methyl acetate as a solvent, in paints, in the manufacture of celluloid adhesives, in lacquer, and in perfume and dye manufacture (http://www.chemvip.com/proddesc-methyl_acetate-en.pdf), it is unlikely that the methyl acetate detection resulted from historical fumigant operations. Based on its limited presence at the site, it is unlikely that methyl acetate would pose an ecological threat. If it did pose a threat, however, the threat would not be attributed to historical site releases. For these reasons, methyl acetate is not identified as a COPEC.

Benzoic acid was detected in one sample at a concentration of 0.59 J mg/kg. For those samples in which benzoic acid was not detected, the SQLs were of a similar magnitude as the detection. As noted above, ecotoxicity information for exposure of terrestrial receptors to benzoic acid could not be found. There is no known use of benzoic acid during historical fumigant operations. For this reason, the presence of benzoic acid is not attributed to the site. Based on attribution, benzoic acid is not identified as a COPEC. The uncertainty associated with this conclusion is discussed in Section 1.5.

Ecological screening values could not be found for the following compounds: 1,1,2-trichlorotrifluoroethane; bromochloromethane; chloroethane; isopropylbenzene;

methylcyclohexane; 4-bromophenyl-phenylether; 4-chlorophenyl-phenylether; benzaldehyde; caprolactam; carbazole; dibenzofuran; n-nitroso-di-n-propylamine; endrin ketone; and malathion. None of these compounds was detected in any of the soil samples.

If the ecological benchmark values for endrin and endrin aldehyde are used as surrogates for endrin ketone, then this pesticide would not be identified as a COPEC because the maximum SQL, 0.004 mg/kg, is less than the surrogate screening values. Based on this comparison, endrin ketone was not identified as a COPEC for lower trophic level receptors. This compound was included in the food web analysis.

The maximum SQLs for 1,1,2-trichlorotrifluoroethane; bromochloromethane; chloroethane; isopropylbenzene; and methylcyclohexane were 0.0091 mg/kg. The analytical sensitivity for these VOCs indicates limited potential for the compounds to be present in the soil. This hypothesis is supported by the industrial and commercial uses of these compounds, which are listed below:

- 1,1,2-Trichlorotrifluoroethane: refrigerant; foam-blowiong agent; aerosol propellant (WHO, 1990).
- Bromochloromethane: fire extinguishers (http://www.speclab.com/compound/c74975.htm)
- Chloroethane: production of tetrylethyl lead, ethyl cellulose, dyes, chemicals, and pharmaceuticals; topical anesthetic; solvent; refrigerant; and medical purposes (dentistry, pain medication, etc) (ATSDR, 1998c).
- Isopropylbenzene (cumene): natural constituent of petroleum hydrocarbons: released to the environment through cigarette tobacco, petroleum spills, rubber vulcanization process, building materials, jet engine exhaust, solvents, pharmaceutical production, textile plants, and other industries (WHO, 1999b). None of the uses cited in WHO, 1999, would be related to grain fumigation.
- Methylcyclohexane: varnish solvents (http://www.scorecard.org/chemical-profiles/uses.tcl?edf_substance_id=108-87-2).

As indicated by these uses, there is limited potential for these compounds to have been released at the site. Therefore, these compounds are not identified as COPECs.

The maximum SQL for malathion was 0.0811 mg/kg. PPDB reports a 14-day LC_{50} of 306 mg/kg for exposure of *Eisenia foetida* to malathion, indicating that adverse effects to terrestrial invertebrates would not be expected if malathion was indeed present. Malathion's use on a wide variety of crops suggests limited potential for toxicity to terrestrial plants. Based on this information, malathion is not identified as a COPEC.

The SQLs for 4-bromophenyl-phenylether= and 4-chlorophenyl-phenylether ranged from 0.087 to 0.38 mg/kg. 4-Bromophenyl phenyl ether is primarily used for research purposes. In the past it was used as a flame retardant (http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/bromophe.pdf). 4-Chlorophenyl-phenylether is used as a dielectric fluid (http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+6176). Based on these uses, it is unlikely that the two halogenated diphenyl ethers would have been associated with historical site operations. For this reason, the two compounds were not identified as COPECs.

The SQL for dibenzofuran ranged from 0.087 to 0.38 mg/kg. A NOEC of 14 mg/kg for *Folsomia fimetaria* was obtained from Sjursen, et al (2001), and a NOEC of 62 mg/kg for *Enchytraeus crypticus* was obtained from Sverdrup, et al (2002). Comparison of the SQLs to these NOECs indicates minimal threat to soil invertebrates if dibenzofuran were present. A study by Sverdrup, et al (2003) investigated the effect of dibenzofuran on seed emergence and early life-stage growth for red clover, rye grass, and mustard. An 20 percent effects concentration (EC_{20}) ranging from 43 mg/kg to 93 mg/kg dibenzofuran was estimated from the data. Comparison of the SQLs to these EC_{20} values indicate limited potential for dibenzofuran to affect terrestrial plants if the chemical were present at the site. Based on this information, dibenzofuran is not identified as a COPEC for either plants or soil invertebrates.

The SQL for carbazole ranged from 0.2 to 0.96 mg/kg. Although a screening value was not found for carbazole, NOECs of 34 mg/kg for *Enchytraeus crypticus* (Sverdrup, et al, 2002) and 17 mg/kg for *Folsomia fimetaria* (Sjursen, et al, 2001) were found. In addition, exposure of red clover, ryegrass, and mustard to carbazole resulted in EC_{20} values ranging from 36 mg/kg to 290 mg/kg for seed emergence and early life-stage growth (Sverdrup, et al, 2003). Based on comparison of the carbazole SQLs to these toxicity values, carbazole is not identified as a COPEC for soil invertebrates or plants.

The SQLs for benzaldehyde and caprolactam ranged from 0.2 to 0.21 mg/kg. Benzaldehyde is used predominantly in the manufacture of dyes (http://en.wikipedia.org/wiki/Benzaldehyde). Caprolactam is the precursor to Nylon-6, which is used in making fibers and plastics (http://en.wikipedia.org/wiki/Caprolactam). Because these chemicals are not site-related, they are not expected to have been released to the site soils.

The SQL for n-nitroso-di-n-propylamine ranged from 0.2 to 0.96 mg/kg. n-Nitroso-di-n-propylamine is a chemical produced = in small amounts for research (ATSDR, 1989). Because it is unlikely that n-nitroso-di-n-proplyamine was associated with historical site use, this compound is not identified as a COPEC.

1.3.3 Initial Food Web Screening

The initial food web calculations are presented in Table 1.7. The results of this initial food web screening are discussed below.

Exposure of birds to PAHs was evaluated in the initial food web screening because no avian Eco-SSLs have been developed. Exposure of birds to the maximum estimated doses for low molecular weight PAHs and high molecular weight PAHs resulted in NOAEL-based ecological quotients (EQs) less than 1, indicating that these PAHs do not pose a threat to birds at the site.

Both avian and mammalian NOAELs were available for the following chemicals: alpha-BHC; beta-BHC; chlordane; delta-BHC; endosulfan I; endosulfan II; endrin; gamma-BHC; Aroclor-1242; and Aroclor-1254. With the exception of exposure of the American woodcock to endrin, all NOAEL-based EQs for these compounds were less than 1, indicating no threat to wildlife receptors. Exposure of the insectivorous bird (American woodcock) to endrin was retained for further evaluation in the refined food web assessment.

Only mammalian NOAELs were available for aldrin, heptachlor, methoxychlor, and toxaphene. For these compounds, all the NOAEL-based EQs were less than 1, indicating no threat to mammals. None of these pesticides was detected in the samples. For aldrin, the PPDB listed an acute lethal dose (LD_{50}) of 6.6 mg/kg for birds. This LD_{50} is several orders of magnitude greater than the maximum dietary concentration of 0.00242 mg/kg (estimated for earthworm tissue). In addition, aldrin, which converts readily to dieldrin through epoxidation, is estimated to have a half-life in soil of 53 days (ATSDR, 2002). The transient nature of aldrin suggests limited potential for this pesticide to be present in the soil. Based on the lack of detections, the soil half-life, and the available toxicity information, aldrin is unlikely to pose a threat to birds at the Garvey site.

The PPDB lists a LD_{50} of 2,000 mg/kg for heptachlor. This LD_{50} is six orders of magnitude greater than the maximum estimated dietary concentration of 0.0087 mg/kg (earthworm tissue). Based on the available avian toxicity information, it is unlikely that heptachlor would pose a threat to the bird communities if the pesticide were present in the site soil.

The PPDB lists a LD_{50} of 2,000 mg/kg for methoxychlor. This LD_{50} is five orders of magnitude greater than the maximum estimated dietary concentration of 0.035 mg/kg (earthworm tissue). Methoxychlor undergoes microbial degradation in both aerobic soil and anaerobic soil. Estimated half-lives ranges from less than 30 days for anaerobic conditions and greater than 100 days for aerobic conditions (ATSDR, 2002d). One study listed in the Toxicological Profile for Methoxychlor (ATSDR, 2002d) reported greater than 70 percent degradation of methoxychlor in aerobic soil over 185 days. There is no known application of methoxychlor during historical site use. If it had been applied, the potential degradation rates suggest limited potential for residual presence of this pesticide at concentrations less than the maximum SQL. Based on the available toxicity information and the limited potential for the analyte to be present, methoxychlor is not identified as a COPEC.

An acute LD_{50} of 15 mg/kg toxaphene was obtained from the PPDB. The maximum dietary concentration is estimated to be 0.34 mg/kg (earthworm tissue). In a study performed by Bush, et al (1977, as cited in WHO, 1984), toxaphene exposure of chickens from day 1 through maturity resulted in no evidence of significant reproductive effects at dietary concentrations ranging from 0.5 mg/kg to 100 mg/kg. Based on the available toxicity information, if toxaphene were present in the soil, it is unlikely that it would pose a threat to birds.

Mammalian NOAELs were available for Aroclor 1016 and Aroclor 1248. Because Aroclor toxicity to birds increases with increasing Aroclor number (WHO, 1992), the avian NOAEL for Aroclor 1254 was used as a surrogate toxicity reference value for Aroclor 1016 and Aroclor 1248. This approach should overestimate potential effects associated with exposure of birds to Aroclor 106 and Aroclor 1248. All NOAEL-based EQs calculated for Aroclor 1016 were less than 1, indicating this Aroclor does not pose a threat to wildlife receptors. For Aroclor 1248, only the NOAEL-baesd EQ calculated for the long-tailed weasel was greater than 1. This Aroclor was retained for further evaluation in the refined food web analysis.

No toxicity reference values for Aroclor 1221 and Aroclor 1232 were found. Neither Aroclor was detected in the soil/sediment samples. As described above for Aroclor 1016 and Aroclor 1248, the avian NOAEL for Aroclor 1254 was used as a surrogate NOAEL for Aroclors 1221 and 1232. The resulting NOAEL-based EQs were less than 1. Mammalian toxicity does not appear to be related to Aroclor number (WHO, 1992). The lowest mammalian NOAEL for the other Aroclors was 0.015 mg/kg bw-day (Aroclor 1248, long-tailed weasel). The daily doses estimated with the maximum Aroclor 1221 SQL and maximum Aroclor 1232 SQL were less than the lowest mammalian NOAEL for the other Aroclors, suggesting limited potential for Aroclor 1221 and Aroclor 1232 to pose a threat to mammals even if the two Aroclors were present at the site. For this reason, Aroclor 1221 and Aroclor 1232 were not identified as COPECs.

No toxicity reference values were available for Aroclors 1260 and 1268. Neither Aroclor was detected in the soil/sediment samples. The maximum mammalian dose estimated for the two Aroclors, 0.0124 mg/kg bw-day, was less than the lowest mammalian NOAEL identified for the other Aroclors (Aroclor 1248, long-tailed weasel). This comparison suggests limited potential for either Aroclor to pose a threat to mammals. Similarly, the maximum avian dose estimated for Aroclor 1260 and Aroclor 1268, 0.0138 mg/kg bw-day, was less than the minimum avian NOAEL of 0.18 mg/kg bw-day (Aroclor 1254). While avian toxicity increases with increasing Aroclor number, the observation that the maximum estimated doses are an order of magnitude lower than the surrogate NOAEL suggests limited potential for Aroclor 1260 and Aroclor 1268 to pose a threat to birds. Based on this information, Aroclor 1260 and Aroclor 1268 were not identified as COPECs.

No toxicity reference values were available for the following chemicals: 1,2-dichlorobenzene; 1,3-dichlorobenzene; 1,4-dichlorobenzene; hexachlorobenzene; hexachlorobutadiene; hexachlorocyclopentadiene; hexachloroethane; 1,2,4-trichlorobenzene; 1,2,4,5-tetrachlorobenzene; 4-bromophenyl-phenylether; 4-chlorophenyl-phenylether; 1,1,2,2-tetrachloroethane; and heptachlor epoxide. Heptachlor epoxide was detected in one sample. The other chemicals were not detected in any samples.

As described in Section 1.3.2, based on commercial and industrial use of 4-bromophenyl-phenylether and 4-chlorophenyl-phenylether, it is unlikely that these compounds would have been released at the site. For this reason, neither compound is identified as a COPEC for wildlife receptors.

No information on the potential toxicity of the dichlorobenzenes to mammals and birds could be found. The dichlorobenzenes have a multitude of industrial/commercial uses, including the manufacture of 3,4-dichloroanline herbicides (1,2-dichlorobenzene), the production of herbicides and insecticides (1,3-dichlorobenzene), and in the control of tree-boring insects, ants and blue mold on tobacco seeds (1,4-dichlorobenzene) (ATSDR, 2006). Iit is unlikely that dichlorobenzenes were associated with the historical grain fumigant operations. However, the agricultural site setting combined with the association of dichlorobenzenes with agricultural products indicates that it is theoretically possible for dichlorobenzenes to be present in the site soil at concentrations less than their SQLs. The maximum SQL for each of the three dichlorobenzenes was 0.0091 mg/kg. These SQLs indicate limited potential for dichlorobenzenes to be present at the site in appreciable quantities. Based on the limited potential for historical release, the dichlorobenzenes are not identified as COPECs.

The PPDB identified an acute mammal LD_{50} of greater than 1,000 mg/kg hexachlorobenzene and an acute bird LD_{50} of 575 mg/kg hexachlorobenzene. The highest dietary concentration estimated from the maximum hexachlorobenzene SQL was 5.75 mg/kg (earthworm tissue). This concentration is 2-3 orders of magnitude lower than the LD_{50} values. However, studies presented in WHO, 1997, indicate that dietary concentrations of 5 mg/kg fed to Japanese quail for 90 days were associated with liver effects. With respect to mammals, pigs exposed to hexachlorobenzene at a dose of 0.5 mg/kg bw-day exhibited liver effects, while a dose of 0.05 mg-kg bw-day showed no effect (WHO, 1997). The exposure time was 90 days. In another study, rats to hexachlorobenzene for 15 weeks exhibited bone impacts at a dose of 0.7 mg/kg bw-day, but not at a dose of 0.07 mg/kg bw-day (WHO, 1997). Comparison of the maximum dietary concentration and maximum dose to the results of these various studies suggests the potential for hexachlorobenzene to affect wildlife receptors if the compound were actually present in at the site. Hexachlorobenzene was identified as a COPEC.

Hexachlorobutadiene was used in the manufacture of rubber compounds, as a solvent, as gyroscope fluid, as a heat transfer liquid, as a hydraulic fluid, and in the production of chlorofluorocarbons and lubricants (ATSDR, 1994c). It is unlikely that hexachlorobutadiene was used in historical site operations. Based on the limited potential for this compound to have been released, hexachlorobutadiene is not identified as a COPEC.

Hexachlorocyclopentadiene is used in the manufacture of several organochlorine pesticides, including dieldrin, and may be present in these products as an impurity up to a level of 1 percent (ATSDR, 1999b). Although detections were in the parts per billion (ppb) range, the data indicate the presence of organochlorine pesticides, such as chlordane, and pesticide degradation products, such as heptachlor epoxide. It is possible that hexachlorocyclopentadiene could have been an impurity in these pesticide formulations. However, the literature indicates that hexachlorocyclopentadiene undergoes both biotic degradation and abiotic degradation in soil (ATSDR, 1999b). Although half-lives were not reported, ATSDR (1999b) indicated that hexachlorocyclopentadiene can degrade rapidly in soil. Based on the observation that, as a product impurity, any hexachlorocyclopentadiene associated with the ppb-level pesticide residues would have been initially present at low concentrations, and on the potential for this compound to degrade naturally, it is unlikely that hexachlorocyclopentadiene is present in the soil in appreciable quantities. Accordingly, hexachlorocyclopentadiene is not identified as a COPEC.

Hexachloroethane has the following uses: smoke pots; grenages; manufacture of degassing pellets; anthelminthic; moth repellent; plasticizer; polymer additive; component of fungicides and insecticides; formulation of extreme pressure lubricants; and production of fire extinguishing fluids (ATSDR, 1997c). Based on these historical uses, it is unlikely that hexachloroethane would have been released during historical site use. Even if it had been released, however, hexachloroethane degrades rapidly in soil under both aerobic and anaerobic conditions. A study by Spanggord, et al (1985; as cited in ATSDR, 1997c) indicated that 99 percent of hexachloroethane was removed in 4 days under anaerobic conditions, and after four weeks under aerobic conditions. Based on the limited potential for historical release and the susceptibility to degradation, it is unlikely that hexachloroethane is present in the soil in appreciable quantities. For this reason, hexachloroethane is not identified as a COPEC.

1,2,4-Trichlorobenzene has been used as a dye carrier, in the manufacture of herbicides, in wood preservatives, in abrasives, and for termite control (http://www.epa.gov/safewater/contaminants/dw_contamfs/124-tric.html). None of these applications is associated with the historical use of the site. The available herbicide data suggest that herbicides have not been applied at the site. Because it is unlikely that this compound would have been associated with historical site use, 1,2,4-trichlorobenzene is not identified as a COPEC.

1,2,4,5-Tetrachlorobenzene is used as an intermediate in the manufacture of herbicides, defoliants, and insecticides (http://www.mass.gov/Eoeea/docs/eea/ota/adv_comm/policy_analysis_draft_recommedations_cercla_chems_never_reported_by_tura_filers.pdf). The available herbicide data suggest that herbicides have not been applied at the site. Pesticide data suggest the limited presence of insecticides, such as dieldrin. Based on 1,2,4,5-tetrachlorobenzene's use in the manufacturing process of insecticides and the limited presence of such compounds, it is unlikely that this compound was released to the site. Accordingly, 1,2,4,5-tetrachlorobenzene is not identified as a COPEC.

Historically, 1,1,2,2-tetrachloroethane was used to produce chlorinated ethenes (ATSDR, 2008b), none of which has been detected in the soil/sediment samples. This compound was also used as a solvent, degreasing agent, and in paint removers, varnishes and lacquers (ATSDR, 2008b). The ATSDR document also notes that 1,1,2,2-tetrachloroethane could have been used at one time as an insecticide and fumigant. Limited information on the potential ecotoxicity of 1,1,2,2-tetrachloroethane was found. Adverse effects were reported for rats exposed at doses ranging from 3.2 – 50 mg/kg bw-day for periods of 2 – 150 days (Gohlke, et al, 1977 as cited in WHO 1998b). These doses are orders of magnitude greater than the highest mammalian dose, 0.0153 mg/kg bw-day, estimated with the maximum SQL.

Comparison of the estimated doses to the available toxicity information suggests limited potential for 1,1,2,2-tetrachloroethane to pose a threat to mammals even if the compound were present at the site. Based on the low SQL of 0.0091 mg/kg, however, it is unlikely that 1,1,2,2-tetrachloroethane is even present in appreciable quantities. Based on these lines of evidence, 1,1,2,2-tetrachloroethane is not identified as a COPEC.

Heptachlor epoxide was detected in one sample at a concentration of 0.0031 J mg/kg. The doses estimated with this single detection were similar in magnitude to those for heptachlor. If the mammalian NOAELs for heptachlor are used as surrogate values for heptachlor epoxide, then there is no threat posed to mammals. In addition, comparison of the maximum estimated dietary concentration for heptachlor epoxide to the avian LD_{50} for heptachlor indicates it is unlikely that heptachlor epoxide would pose a threat to the bird communities. Based on this information, heptachlor epoxide is not identified as a COPEC.

Based on the initial screening for exposure via the food web, the following analytes were retained for further analysis in the refined food web evaluation: endrin (American woodcock); Aroclor 1248 (long-tailed weasel); and hexachlorobenzene.

1.4 REFINED EXPOSURE ASSESSMENT

The initial screening was performed with extremely conservative assumptions that would result in the maximum possible exposure by ecological receptors. The refined exposure assessment provides the risk manager with an assessment based on a more probable set of exposure assumptions. The refinement of the assumptions and associated justification are presented below:

- For detected analytes, the distribution of the chemical throughout the site was evaluated. Due to the limited number of detections, it was not possible to calculate a 95 percent upper confidence level to use as an exposure point concentration.
- For analytes not detected in any of the soil samples, one half the SQL was used as the exposure point concentration, instead of the maximum SQL.
- In the screening level evaluation, it was assumed that food consumption occurred entirely within the contaminated site. For the refined evaluation, chemical intake was adjusted to reflect the receptor's foraging area.
- Doses were compared to the lowest observed adverse effect levels (LOAELs) in addition to NOAELs. For chemicals with Eco-SSLs, the LOAEL was calculated to be the geometric mean of the LOAELs identified for reproduction, growth, and survival.
- High end normalized ingestion rates were replaced with mean normalized food ingestion rates from Attachment 4-1 of the Guidance for Developing Ecological Soil Screening Levels (EPA, 2007a).
- 90^{th} percentile soil ingestion rates were replaced with 50^{th} percentile soil ingestion rates (EPA, 2007a).

Refined exposure parameters for each receptor endpoint species are presented in Table 1.8. The refined exposure assessment is shown in Table 1.9. The results of the refined exposure assessment are presented below.

All NOAEL-based EQs calculated for high molecular weight PAHs, endrin, and Aroclor 1248 were less than 1, indicating that these chemicals do not pose a threat to the wildlife community. The NOAEL-based EQ for exposure of the short-tailed shrew to dieldrin was 2, but all the dieldrin LOAEL-based EQs were less than 1. These calculations indicate that dieldrin poses minimal threat to mammals. Because the dieldrin EQs were calculated with the maximum detected concentration, the doses are likely overestimated. Based on the EQ calculations, high molecular weight PAHs, dieldrin, endrin, and Aroclor 1248 are not retained as COPECs.

As described in Section 1.3.3, toxicity reference values are not available for hexachlorobenzene. An exposure point concentration equal to one-half the maximum SQL results in an earthworm tissue concentration, 2.87 mg/kg, that is slightly less than the dietary concentration, 5 mg/kg, that resulted in adverse effects to Japanese quail (WHO, 1997). The highest estimated mammalian dose, 0.48 mg/kg bw-day, was similar in magnitude to doses in laboratory studies that resulted in adverse effects to pigs and rats (WHO, 1997). This information suggests the potential for hexachlorobenzene to pose a threat to wildlife receptors if it were actually present at the site. However, for the following reasons, it is unlikely that hexachlorobenzene is present in the soil at concentrations equal to one-half the maximum SQL. Production of hexachlorobenzene as a commercial product appear to have ceased in the late 1970s (ATSDR, 2002c). Currently, hexachlorobenzene results from being a by-product or impurity in chlorinated solvent manufacuting, including the manufacture of carbon tetrachloride (ATSDR, 2002c). The soil data, however, indicate limited potential for carbon tetrachloride to have been released to surface or near surface soil. Based on this information, it is unlikely that hexachlorobenzene was released at the site within the past 30 years. Although hexachlorobenzene was used as a fungicide on grains, its principal formulations were as dusts and powders (http://npic.orst.edu/RMPP/rmpp_ch15.pdf, prepared by the National Pesticide Information Center). Based on this information, it is unlikely that hexachlorobenzene would have been associated with fumigant operations that would have occurred while the chemical was still available as a commercial product. Based on information concerning historical use of the compound, hexachlorobenzene is not retained as a COPEC.

1.5 UNCERTAINTY ASSESSMENT

As with any risk assessment, the need to make assumptions to estimate exposure results in uncertainty. While the initial screening was intended to err on the side of dose overestimation, the use of average ingestion rates in the refined food web analysis could underestimate the potential dose to individual receptors. On the other hand, the use of the maximum detected concentrations in the refined food web analysis likely overestimates potential doses, particularly given the limited detection frequencies associated with the analytes. In addition, the food web evaluation was based on the assumption that each receptor would consume only one type of food item. For insectivores, which tend to be the most susceptible receptor via the food web due to the tendency for organic compounds to accumulate in earthworm tissue, this assumption likely overestimates the potential dose. Many insectivores eat a mixture of insects, worms, and plant material. Finally, the area use factor (AUF) was calculated for the entire 106-acre facility even though operations occurred only on 22 acres. This assumption, combined with the observation that only a few soil/sediment samples contained detections of analytes, likely overestimates the potential doses.

For many chemicals, ecological benchmark values and/or NOAELs/LOAELs were not available. The absence of toxicity values, it is difficult to assess the potential effects to ecological receptors. This uncertainty was mitigated through evaluation of the likelihood that the chemical would have been associated with historical operations and a review of available toxicity studies. However, this lack of screening values could underestimate the potential for ecological effects.

For non-detected analytes that did have screening values, analytical sensitivity (i.e., SQLs greater than screening values) contributed to the uncertainty of the evaluation. This uncertainty was addressed through assessing the potential for the chemical to be present at the site based on historical use of the compound. The decision to eliminate chemicals as COPECs based on historical use even if the SQL exceeded screening values could underestimate the potential ecological risks.

1.6 SCIENTIFIC/MANAGEMENT DECISION POINT (SMDP)

The results of the initial screening evaluation and refined food web analysis indicate that current site conditions pose minimal threat to ecological receptors.

1.7 SUMMARY

This SLERA was developed to analyze the potential effects of site contaminants on plants, soil invertebrates, mammals, and birds. Detected concentrations and, for non-detected analytes, SQLs were compared to benchmark values and were used to estimate daily doses via the food web. The initial, conservative screening indicated that PAHs and various other organic compounds required a more thorough evaluation with respect to exposure via the food web. To address the uncertainty generated through the conservatism associated with the initial screening, a refined exposure assessment was completed. This latter evaluation considered the mean normalized food ingestion and mean soil ingestion rates. Based on this refined assessment, current site conditions do not pose a threat to ecological receptors.

TABLE(S)

Sample Location	**SB-01**	**SB-02**	**SB-05**	**SB-07**	**SB-09**	**SB-10**	**SB-11**	**SB-12**	**SB-16**	**SB-17**	**SB-17**	**SB-18**	**SB-19**	**SB-20**	**SB-21**	**SB-23**	**SB-24**
EPA Lab ID	**4518-62**	**4518-138**	**4518-15**	**4518-51**	**4518-46**	**4518-133**	**4518-40**	**4518-35**	**4518-117**	**4518-109**	**4518-109FD**	**4518-121**	**4518-125**	**4518-28**	**4518-31**	**4518-24**	**4518-18**
Sample Collection Depth (ft bgs)	**0.5-1**	**0.5-1**	**1.3-2.3**	**1.5-2**	**0-1**	**1.5-2**	**0-1**	**0-1**	**0.5-1**	**0-1**	**0-1**	**0-0.5**	**0-0.5**	**0-1.5**	**0-0.5**	**0.5-1.5**	**0-1**
Sample Collection Date	**8/4/2009**	**8/8/2009**	**8/5/2009**	**8/4/2009**	**8/4/2009**	**8/7/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**
VOCs (µg/kg)																	
1,1,1-Trichloroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,1,2,2-Tetrachloroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,1,2-Trichloroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,1,2-Trichlorotrifluoroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,1-Dichloroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,1-Dichloroethene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2,3-Trichlorobenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2,4-Trichlorobenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2-Dibromo-3-Chloropropane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2-Dibromoethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2-Dichlorobenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2-Dichloroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,2-Dichloropropane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,3-Dichlorobenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
1,4-Dichlorobenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
2-Butanone	**15**	**10**	10 U	**17**	10 U	**19**	12 U	**27**	11 U	NA	NA	NA	NA	NA	NA	11 U	**14**
2-Hexanone	9.8 U	9.7 U	10 U	11 U	10 U	12 U	12 U	14 U	11 U	NA	NA	NA	NA	NA	NA	11 U	11 U
4-Methyl-2-Pentanone	9.8 U	9.7 U	10 U	11 U	10 U	12 U	12 U	14 U	11 U	NA	NA	NA	NA	NA	NA	11 U	11 U
Acetone	**61**	**78**	**17**	**100**	**29**	**90**	**55**	**130**	**36**	NA	NA	NA	NA	NA	NA	**26**	**72**
Benzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Bromochloromethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Bromodichloromethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Bromoform	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Bromomethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Carbon Disulfide	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Carbon Tetrachloride	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Chlorobenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Chloroethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Chloroform	**13**	**7.5**	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Chloromethane (methyl chloride)	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
cis-1,2-Dichloroethene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
cis-1,3-Dichloropropene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Cyclohexane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Dibromochloromethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Dichlorodifluoromethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Ethyl Benzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Isopropylbenzene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
m and/or p-Xylene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Methyl Acetate	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Methyl tert-butyl ether	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Methylcyclohexane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Methylene Chloride	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1.1
Remedial Investigation Soil Analytical Data
Garvey Elevator Superfund Site
Hastings, NE

Sample Location	SB-01	SB-02	SB-05	SB-07	SB-09	SB-10	SB-11	SB-12	SB-16	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-23	SB-24
EPA Lab ID	4518-62	4518-138	4518-15	4518-51	4518-46	4518-133	4518-40	4518-35	4518-117	4518-109	4518-109FD	4518-121	4518-125	4518-28	4518-31	4518-24	4518-18
Sample Collection Depth (ft bgs)	0.5-1	0.5-1	1.3-2.3	1.5-2	0-1	1.5-2	0-1	0-1	0.5-1	0-1	0-1	0-0.5	0-0.5	0-1.5	0-0.5	0.5-1.5	0-1
Sample Collection Date	8/4/2009	8/8/2009	8/5/2009	8/4/2009	8/4/2009	8/7/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009
o-Xylene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Styrene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Tetrachloroethene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Toluene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
trans-1,2-Dichloroethene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
trans-1,3-Dichloropropene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Trichloroethene	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Trichlorofluoromethane	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
Vinyl Chloride	4.9 U	4.8 U	5.1 U	5.6 U	5.1 U	5.9 U	5.9 U	6.8 U	5.4 U	NA	NA	NA	NA	NA	NA	5.6 U	5.7 U
SVOCs (μg/kg)																	
1,2,4,5-Tetrachlorobenzene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2,4,6-Trichlorophenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2,4-Dichlorophenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2,4-Dimethylphenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2,4-Dinitrophenol	NA	NA	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	400 U
2,4-Dinitrotoluene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2,6-Dinitrotoluene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2-Chloronaphthalene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2-Chlorophenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2-Methylphenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
2-Nitroaniline	NA	NA	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	400 U
2-Nitrophenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
3,3'-Dichlorobenzidine	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
3-Nitroaniline	NA	NA	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	400 U
4,6-Dinitro-2-methylphenol (o-cres	NA	NA	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	400 U
4-Bromophenyl-phenylether	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
4-Chloro-3-methylphenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
4-Chloroaniline	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
4-Chlorophenyl-phenylether	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
4-Methylphenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
4-Nitroaniline	NA	NA	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	400 U
4-Nitrophenol	NA	NA	400 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 U	400 U
Acetophenone	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Atrazine	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzaldehyde	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzoic Acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
bis(2-Chloroethoxy)methane	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
bis(2-Chloroethyl)ether	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U

Sample Location	SB-01	SB-02	SB-05	SB-07	SB-09	SB-10	SB-11	SB-12	SB-16	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-23	SB-24
EPA Lab ID	**4518-62**	**4518-138**	**4518-15**	**4518-51**	**4518-46**	**4518-133**	**4518-40**	**4518-35**	**4518-117**	**4518-109**	**4518-109FD**	**4518-121**	**4518-125**	**4518-28**	**4518-31**	**4518-24**	**4518-18**
Sample Collection Depth (ft bgs)	**0.5-1**	**0.5-1**	**1.3-2.3**	**1.5-2**	**0-1**	**1.5-2**	**0-1**	**0-1**	**0.5-1**	**0-1**	**0-1**	**0-0.5**	**0-0.5**	**0-1.5**	**0-0.5**	**0.5-1.5**	**0-1**
Sample Collection Date	**8/4/2009**	**8/8/2009**	**8/5/2009**	**8/4/2009**	**8/4/2009**	**8/7/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**
bis(2-Chloroisopropyl)ether	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
bis(2-Ethylhexyl)phthalate	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Butylbenzylphthalate	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Caprolactam	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Carbazole	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Dibenzofuran	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Diethylphthalate	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Dimethylphthalate	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Di-n-butylphthalate	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Di-n-octylphthalate	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Hexachlorobenzene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Hexachlorobutadiene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Hexachlorocyclopentadiene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Hexachloroethane	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Isophorone	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Nitrobenzene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
N-nitroso-di-n-propylamine	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
N-nitrosodiphenylamine	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Pentachlorophenol	NA	NA	400 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400 UJ	400 UJ
Phenol	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
PAHs (μg/kg)																	
2-Methylnaphthalene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Acenaphthene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Acenaphthylene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Anthracene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Fluoranthene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Fluorene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Naphthalene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Phenanthrene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzo(a)anthracene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzo(a)pyrene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzo(b)fluoranthene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzo(g,h,i)perylene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Benzo(k)fluoranthene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Chrysene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Dibenz(a,h)anthracene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Indeno(1,2,3-cd)pyrene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Pyrene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210 U	210 U
Pesticides (μg/kg)																	
A-BHC	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
Aldrin	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
B-BHC	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
cis-Chlordane	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
Chlordane, technical	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-BHC	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U

Sample Location	SB-01	SB-02	SB-05	SB-07	SB-09	SB-10	SB-11	SB-12	SB-16	SB-17	SB-17	SB-18	SB-19	SB-20	SB-21	SB-23	SB-24
EPA Lab ID	4518-62	4518-138	4518-15	4518-51	4518-46	4518-133	4518-40	4518-35	4518-117	4518-109	4518-109FD	4518-121	4518-125	4518-28	4518-31	4518-24	4518-18
Sample Collection Depth (ft bgs)	0.5-1	0.5-1	1.3-2.3	1.5-2	0-1	1.5-2	0-1	0-1	0.5-1	0-1	0-1	0-0.5	0-0.5	0-1.5	0-0.5	0.5-1.5	0-1
Sample Collection Date	8/4/2009	8/8/2009	8/5/2009	8/4/2009	8/4/2009	8/7/2009	8/4/2009	8/4/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009
Dieldrin	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
Endosulfan I	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
Endosulfan II	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
Endosulfan Sulfate	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
Endrin	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
Endrin Aldehyde	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
Endrin Ketone	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
G-BHC	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
Heptachlor	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
Heptachlor Epoxide	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	**3.1 J**	2.1 U	2.1 U
p,p'-DDD	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
p,p'-DDE	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
p,p'-DDT	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U
p,p'-Methoxychlor	NA	NA	20 U	NA	NA	NA	NA	NA	NA	20 U	20 U	21 U	18 U	21 U	21 U	21 U	21 U
Toxaphene	NA	NA	200 U	NA	NA	NA	NA	NA	NA	200 U	200 U	210 U	180 U	210 U	210 U	210 U	210 U
trans-Chlordane	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	2.0 U	2.0 U	2.1 U	1.8 U	2.1 U	2.1 U	2.1 U	2.1 U
UAA Pesticides (µg/kg)																	
Malathion	NA	NA	81.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81 U	80.6 U
Herbicides (µg/kg)																	
2,4,5-T(richlorophenoxyacetic acid	NA	NA	11.8 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.8 U	11.7 U
2,4,5-TP (Silvex)	NA	NA	9.6 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.6 U	9.5 U
2,4-D	NA	NA	19.7 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.7 U	19.6 U
PCBs (µg/kg)																	
Aroclor 1016	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1221	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1232	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1242	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1248	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	**200**	36 U	40 U	40 U	40 U	40 U
Aroclor 1254	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1260	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1262	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U
Aroclor 1268	NA	NA	40 U	NA	NA	NA	NA	NA	NA	39 U	39 U	40 U	36 U	40 U	40 U	40 U	40 U

Sample Location	SB-26	SB-27	SB-29	SB-30	SB-31	SB-32	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	**4518-81**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**	**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Depth (ft bgs)	**1-2**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**											
Sample Collection Date	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
VOCs (µg/kg)																	
1,1,1-Trichloroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2,2-Tetrachloroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2-Trichloroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1,2-Trichlorotrifluoroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1-Dichloroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,1-Dichloroethene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2,3-Trichlorobenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 UJ
1,2,4-Trichlorobenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 UJ
1,2-Dibromo-3-Chloropropane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dibromoethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichlorobenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichloroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,2-Dichloropropane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,3-Dichlorobenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
1,4-Dichlorobenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
2-Butanone	10.0 U	14 U	**15**	**14**	**20**	**NA**	**27**	**17**	**13**	12 U	**23**	**12**	**24**	**24**	**30**	**23**	**33**
2-Hexanone	10.0 U	14 U	9.5 U	12 U	13 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
4-Methyl-2-Pentanone	10.0 U	14 U	9.5 U	12 U	13 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Acetone	**42**	**39**	**93**	**56**	**140**	**NA**	**520 J**	**260 J**	**100 J**	12 UJ	**430 J**	**170 J**	**350 J**	**330 J**	**320 J**	**210 J**	**360 J**
Benzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromochloromethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromoform	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Bromomethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Carbon Disulfide	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Carbon Tetrachloride	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chlorobenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloroethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloroform	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Chloromethane (methyl chloride)	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
cis-1,2-Dichloroethene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
cis-1,3-Dichloropropene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Cyclohexane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Dibromochloromethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Dichlorodifluoromethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 UJ	6.1 UJ	5.9 UJ	5.9 UJ	7.4 UJ	6.1 UJ	6.7 UJ	6.1 UJ	8.5 UJ	7.4 UJ	9.1 UJ
Ethyl Benzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Isopropylbenzene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
m and/or p-Xylene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	18 U	12 U	12 U	12 U	15 U	12 U	13 U	12 U	17 U	15 U	18 U
Methyl Acetate	5.0 U	7.1 U	4.8 U	6.2 U	**7.3**	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methyl tert-butyl ether	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methylcyclohexane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Methylene Chloride	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Naphthalene	NA	NA	NA	NA	NA	NA	18 U	12 U	12 U	12 U	15 U	12 U	13 U	12 U	17 U	15 U	18 U

Sample Location	SB-26	SB-27	SB-29	SB-30	SB-31	SB-32	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	**4518-81**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**	**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Depth (ft bgs)	**1-2**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**											
Sample Collection Date	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
o-Xylene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Styrene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Tetrachloroethene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Toluene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	**37**	6.1 U	8.5 U	7.4 U	9.1 U
trans-1,2-Dichloroethene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
trans-1,3-Dichloropropene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Trichloroethene	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Trichlorofluoromethane	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
Vinyl Chloride	5.0 U	7.1 U	4.8 U	6.2 U	6.4 U	NA	8.9 U	6.1 U	5.9 U	5.9 U	7.4 U	6.1 U	6.7 U	6.1 U	8.5 U	7.4 U	9.1 U
SVOCs (µg/kg)																	
1,2,4,5-Tetrachlorobenzene	NA	NA	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2,4,5-Trichlorophenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4,6-Trichlorophenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4-Dichlorophenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2,4-Dimethylphenol	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
2,4-Dinitrophenol	NA	NA	NA	NA	390 U	NA	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
2,4-Dinitrotoluene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
2,6-Dinitrotoluene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Chloronaphthalene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
2-Chlorophenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2-Methylphenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
2-Nitroaniline	NA	NA	NA	NA	390 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
2-Nitrophenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
3,3'-Dichlorobenzidine	NA	NA	NA	NA	200 U	NA	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
3-Nitroaniline	NA	NA	NA	NA	390 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
4,6-Dinitro-2-methylphenol (o-cres	NA	NA	NA	NA	390 U	NA	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
4-Bromophenyl-phenylether	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
4-Chloro-3-methylphenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
4-Chloroaniline	NA	NA	NA	NA	200 U	NA	500 UJ	500 UJ	990 UJ	970 UJ	460 UJ	450 UJ	440 UJ	440 UJ	1900 UJ	940 UJ	930 UJ
4-Chlorophenyl-phenylether	NA	NA	NA	NA	200 U	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
4-Methylphenol	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
4-Nitroaniline	NA	NA	NA	NA	390 U	NA	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
4-Nitrophenol	NA	NA	NA	NA	390 U	NA	500 U	500 U	990 UJ	970 U	460 U	450 U	440 U	440 U	1900 U	940 U	930 U
Acetophenone	NA	NA	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Atrazine	NA	NA	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic Acid	NA	NA	NA	NA	NA	NA	**590 J**	500 UJ	990 UJ	970 U	460 UJ	450 UJ	440 UJ	440 UJ	1900 U	940 U	930 U
Benzyl Alcohol	NA	NA	NA	NA	NA	NA	250 U	250 U	490 UJ	490 UJ	230 U	230 U	220 U	220 U	960 UJ	470 UJ	470 UJ
Biphenyl	NA	NA	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
bis(2-Chloroethyl)ether	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ

Sample Location	SB-26	SB-27	SB-29	SB-30	SB-31	SB-32	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	**4518-81**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**	**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Depth (ft bgs)	**1-2**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**											
Sample Collection Date	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	200 U	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Butylbenzylphthalate	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Caprolactam	NA	NA	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Dibenzofuran	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Diethylphthalate	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Dimethylphthalate	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Di-n-butylphthalate	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Di-n-octylphthalate	NA	NA	NA	NA	200 U	NA	250 U	250 U	490 UJ	490 U	230 U	230 U	220 U	220 U	960 U	470 U	470 U
Hexachlorobenzene	NA	NA	NA	NA	200 U	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachlorobutadiene	NA	NA	NA	NA	200 U	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachlorocyclopentadiene	NA	NA	NA	NA	200 U	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Hexachloroethane	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Isophorone	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Nitrobenzene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
N-nitroso-di-n-propylamine	NA	NA	NA	NA	200 U	NA	250 UJ	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
N-nitrosodiphenylamine	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pentachlorophenol	NA	NA	NA	NA	390 UJ	NA	250 UJ	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
Phenol	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
PAHs (µg/kg)																	
2-Methylnaphthalene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Acenaphthene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Acenaphthylene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Anthracene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Fluoranthene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Fluorene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Naphthalene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Phenanthrene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzo(a)anthracene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzo(a)pyrene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(b)fluoranthene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(g,h,i)perylene	NA	NA	NA	NA	200 U	NA	99 UJ	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Benzo(k)fluoranthene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Chrysene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Dibenz(a,h)anthracene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pyrene	NA	NA	NA	NA	200 U	NA	99 U	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pesticides (µg/kg)																	
A-BHC	NA	NA	NA	NA	2.0 U	2.0 U	0.35 U	0.35 U	0.37 U	0.35 U	0.35 U	0.33 U	0.32 U	0.33 U	0.35 U	0.35 U	0.34 U
Aldrin	NA	NA	NA	NA	2.0 U	2.0 U	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	0.69 U	0.7 U	0.68 U
B-BHC	NA	NA	NA	NA	2.0 U	2.0 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U
cis-Chlordane	NA	NA	NA	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane, technical	NA	NA	NA	NA	NA	NA	23 U	23 U	4.9 U	24 U	23 U	4.4 U	21 U	22 U	23 U	**12 J**	4.5 U
D-BHC	NA	NA	NA	NA	2.0 U	2.0 U	0.46 U	0.46 U	0.49 U	0.47 U	0.46 U	0.44 U	0.42 U	0.44 U	0.46 U	0.47 U	0.45 U

Sample Location	SB-26	SB-27	SB-29	SB-30	SB-31	SB-32	SD-01	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID	**4518-81**	**4518-89**	**4518-98**	**4518-112**	**4518-10**	**4518-100**	**4525-10**	**4525-11**	**4525-1**	**4525-8**	**4525-9**	**4525-2**	**4525-3**	**4525-3FD**	**4525-5**	**4525-6**	**4525-7**
Sample Collection Depth (ft bgs)	**1-2**	**0-1**	**0-1**	**0-1**	**0-1**	**0-1**											
Sample Collection Date	**8/5/2009**	**8/5/2009**	**8/5/2009**	**8/6/2009**	**8/5/2009**	**8/6/2009**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**	**8/19/2010**
Dieldrin	NA	NA	NA	NA	3.9 U	4.0 U	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	**0.84**	**13**	0.68 U
Endosulfan I	NA	NA	NA	NA	2.0 U	2.0 U	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	0.69 U	0.7 U	0.68 U
Endosulfan II	NA	NA	NA	NA	3.9 U	4.0 U	0.92 U	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	4.5 UJ
Endosulfan Sulfate	NA	NA	NA	NA	3.9 U	4.0 U	4.6 U	4.6 U	0.98 U	4.7 U	4.6 U	0.87 U	4.2 U	4.4 U	4.6 U	9.4 U	0.91 U
Endrin	NA	NA	NA	NA	3.9 U	4.0 U	4.6 U	4.6 U	0.98 U	4.7 U	4.6 U	0.87 UJ	4.2 U	4.4 U	4.6 U	9.4 U	0.91 U
Endrin Aldehyde	NA	NA	NA	NA	3.9 U	4.0 U	5.8 U	5.8 U	1.2 U	5.9 U	5.8 U	1.1 U	5.3 U	5.5 U	5.8 U	12 U	1.1 UJ
Endrin Ketone	NA	NA	NA	NA	3.9 U	4.0 U	4.6 U	4.6 U	4.9 U	4.7 U	4.6 U	0.87 UJ	4.2 U	4.4 U	4.6 U	9.4 U	0.91 UJ
G-BHC	NA	NA	NA	NA	2.0 U	2.0 U	0.46 U	0.46 U	0.49 U	0.47 U	0.46 U	0.44 U	0.42 U	0.44 U	0.46 U	0.47 U	0.45 U
Heptachlor	NA	NA	NA	NA	2.0 U	2.0 U	3.5 U	3.5 U	0.73 U	3.5 U	3.5 U	0.65 UJ	3.2 U	3.3 U	3.5 U	7 U	3.4 U
Heptachlor Epoxide	NA	NA	NA	NA	2.0 U	2.0 U	0.69 U	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	3.2 U	0.66 U	0.69 U	0.7 U	0.68 U
p,p'-DDD	NA	NA	NA	NA	3.9 U	4.0 U	0.92 U	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	0.91 U
p,p'-DDE	NA	NA	NA	NA	3.9 U	4.0 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	**2.1 J**	1.1 U
p,p'-DDT	NA	NA	NA	NA	3.9 U	4.0 U	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	**2.1 J**	5.7 U
p,p'-Methoxychlor	NA	NA	NA	NA	20 U	20 U	2.3 UJ	2.3 UJ	2.4 UJ	2.4 UJ	2.3 UJ	2.2 UJ	2.1 UJ	2.2 UJ	2.3 UJ	2.3 UJ	11 U
Toxaphene	NA	NA	NA	NA	200 U	200 U	120 U	120 U	120 U	120 U	120 U	110 U	110 U	110 U	120 U	230 U	114 U
trans-Chlordane	NA	NA	NA	NA	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UAA Pesticides (μg/kg)																	
Malathion	NA	NA	NA	NA	78.6 U	80.2 U	4.6 U	4.6 U	4.9 U	4.7 U	4.6 U	4.36 U	4.2 U	4.4 U	4.6 U	4.7 U	4.5 U
Herbicides (μg/kg)																	
2,4,5-T(richlorophenoxyacetic acid	NA	NA	NA	NA	11.4 U	11.7 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TP (Silvex)	NA	NA	NA	NA	9.3 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-D	NA	NA	NA	NA	19.1 U	19.5 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PCBs (μg/kg)																	
Aroclor 1016	NA	NA	NA	NA	39 U	40 U	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1221	NA	NA	NA	NA	39 U	40 U	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1232	NA	NA	NA	NA	39 U	40 U	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1242	NA	NA	NA	NA	39 U	40 U	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1248	NA	NA	NA	NA	39 U	40 U	23 U	23 U	24 U	24 U	23 U	22 U	21 U	22 U	23 U	23 U	23 U
Aroclor 1254	NA	NA	NA	NA	39 U	40 U	12 U	12 U	12 U	12 U	12 U	11 U	11 U	11 U	12 U	12 U	11 U
Aroclor 1260	NA	NA	NA	NA	39 U	40 U	58 U	58 U	61 U	59 U	58 U	54 U	53 U	55 U	58 U	120 U	57 U
Aroclor 1262	NA	NA	NA	NA	39 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	NA	NA	NA	NA	39 U	40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

ft bgs = feet below ground surface
VOC = volatile organic compound
μg/kg = microgram per kilogram
ID = identification
U = not detected
NA = not analyzed

SVOC = semivolatile organic compound
PAH = polycyclic aromatic hydrocarbon
UJ = not detected, estimated value
J = estimated value
UAA = Use Attainability Analyses
PCB = polychlorinated biphenyl

Table 1.2
Exposure Parameters for Upper Trophic Level Ecological Receptors, Initial Screening
Garvey Elevator Superfund Site
Hastings, Nebraska

Receptor	Feeding Guild	Food Ingestion Rate		[a]Dietary Composition	Soil Ingestion Rate	
		kg dw/kg bw/d	Reference		Fraction of Diet	Reference
Birds						
Mourning dove (*Zenaida macroura*)	Avian herbivore/grainivore	0.19	EPA, 2007	100 % foliage/seeds	0.139	EPA, 2007
American woodcock (*Scolopax minor*)	Avian insectivore	0.214	EPA, 2007	100% earthworms	0.164	EPA, 2007
Red-tailed hawk (*Buteo jamaicensis*)	Avian carnivore	0.0353	EPA, 2007	100% small mammals	0.057	EPA, 2007
Mammals						
meadow vole (*Microtus pennsylvanicus*)	Mammalian herbivore	0.0875	EPA, 2007	100% foliage	0.032	EPA, 2007
Short-tailed shrew (*Blarina brevicauda)*	Mammalian insectivore	0.209	EPA, 2007	100% earthworms	0.03	EPA, 2007
long-tailed weasel (*Mustella frenata*)	Mammalian carnivore	0.13	EPA, 2007	100% small mammals	0.043	EPA, 2007

Notes:

a) It was assumed that each receptor would consume only the dietary item for which the species serves as the endpoint receptor (e.g., plants for herbivores; worms for insectivores; etc.).

Note - water ingestion not considered because surface water not identified as a contaminated medium (see text for details).

EPA, 2007. Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs): Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs. OSWER Directive 9285.7-55, Revised April 2007.

Table 1.3
Soil Bioaccumulation Factors
Used For Plants and Soil Invertebrates
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Log		Soil-Plant BAF (dry weight)		Kww	Koc	Kd	Soil-Invertebrate BAF (dry weight)	
	Kow	Plant BCF	Value	Reference	(L/kg worm dry weight)	(L/kg soil dry weight)	Kd = Foc*Koc	Value	Reference
VOCs									
1,2,4-Trichlorobenzene	4.01	0.15	1.426	EPA, 2007, model	1.93E+02	1.78E+03	1.78E+01	10.82	EPA, 2007, model
1,2-Dichlorobenzene	3.43	0.39	2.452	EPA, 2007, model	6.03E+01	6.17E+02	6.17E+00	9.77	EPA, 2007, model
1,3-Dichlorobenzene	3.43	0.39	2.452	EPA, 2007, model	6.03E+01	6.17E+02	6.17E+00	9.77	EPA, 2007, model
1,4-Dichlorobenzene	3.42	0.39	2.475	EPA, 2007, model	5.91E+01	6.17E+02	6.17E+00	9.57	EPA, 2007, model
1,1,2,2-Tetrachloroethane	2.39	0.81	6.477	EPA, 2007, model	7.50E+00	9.33E+01	9.33E-01	8.04	EPA, 2007, model
SVOCs									
1,2,4,5-Tetrachlorobenzene*	4.9	-0.21	0.621	EPA, 2007, model	1.15E+03	2.22E+03	2.22E+01	51.59	EPA, 2007, model
4-Bromophenyl-phenylether**	5	-0.25	0.566	EPA, 2007, model	1.40E+03	8.32E+04	8.32E+02	1.68	EPA, 2007, model
4-Chlorophenyl-phenylether***	4.08	0.13	1.336	EPA, 2007, model	2.22E+02	2.26E+03	2.26E+01	9.80	EPA, 2007, model
Hexachlorobenzene	5.89	-0.61	0.246	EPA, 2007, model	8.32E+03	5.50E+04	5.50E+02	15.13	EPA, 2007, model
Hexachlorobutadiene	4.81	-0.17	0.675	EPA, 2007, model	9.56E+02	5.37E+04	5.37E+02	1.78	EPA, 2007, model
Hexachlorocyclopentadiene	5.39	-0.41	0.393	EPA, 2007, model	3.06E+03	2.00E+05	2.00E+03	1.53	EPA, 2007, model
Hexachloroethane	4	0.16	1.439	EPA, 2007, model	1.89E+02	1.78E+03	1.78E+01	10.60	EPA, 2007, model
PAHs									
Acenaphthene			$\ln(C_p) = -0.8556 * \ln(C_s) - 5.562$	EPA, 2007				1.47	EPA, 2007
Acenaphthylene			$\ln(C_p) = 0.791 * \ln(C_s) - 1.144$	EPA, 2007				22.90	EPA, 2007
Anthracene			$\ln(C_p) = 0.7784 * \ln(C_s) - 0.9887$	EPA, 2007				2.42	EPA, 2007
Fluoranthene			0.50	EPA, 2007				3.04	EPA, 2007
Fluorene			$\ln(C_p) = -0.8556 * \ln(C_s) - 5.562$	EPA, 2007				9.57	EPA, 2007
Naphthalene			12.2	EPA, 2007				4.40	EPA, 2007
Phenanthrene			$\ln(C_p) = 0.6203 * \ln(C_s) - 0.1665$	EPA, 2007				1.72	EPA, 2007
Total LMW PAHs			$\ln(C_p) = 0.4544 * \ln(C_s) - 1.3205$	EPA, 2007				3.04	EPA, 2007
Benzo(a)anthracene			$\ln(C_p) = 0.5944 * \ln(C_s) - 2.7078$	EPA, 2007				1.59	EPA, 2007
Benzo(a)pyrene			$\ln(C_p) = 0.9750 * \ln(C_s) - 2.0615$	EPA, 2007				1.33	EPA, 2007
Benzo(b)fluoranthene			0.310	EPA, 2007				2.60	EPA, 2007
Benzo(ghi)perylene			$\ln(C_p) = 1.1829 * \ln(C_s) - 0.9313$	EPA, 2007				2.94	EPA, 2007
Benzo(k)fluoranthene			$\ln(C_p) = 0.8595 * \ln(C_s) - 2.1579$	EPA, 2007				2.60	EPA, 2007
Chrysene			$\ln(C_p) = 0.5944 * \ln(C_s) - 2.7078$	EPA, 2007				2.29	EPA, 2007
Dibenz(a,h)anthracene			0.130	EPA, 2007				2.31	EPA, 2007
Indeno(1,2,3-c,d)pyrene			0.110	EPA, 2007				2.86	EPA, 2007
Pyrene			0.720	EPA, 2007				1.75	EPA, 2007
Total HMW PAHs			$\ln(C_p) = 0.9469 * \ln(C_s) - 1.7026$	EPA, 2007				2.60	EPA, 2007
Pesticides									
A-BHC	3.8	0.24	1.735	EPA, 2007, model	1.26E+02	1.23E+03	1.23E+01	10.28	EPA, 2007, model
Aldrin	6.5	-0.86	0.139	EPA, 2007, model	2.82E+04	2.45E+06	2.45E+04	1.15	EPA, 2007, model
B-BHC	3.81	0.24	1.719	EPA, 2007, model	1.29E+02	1.26E+03	1.26E+01	10.24	EPA, 2007, model
Chlordane	6.32	-0.78	0.165	EPA, 2007, model	3.15E+03	1.20E+05	1.20E+03	2.63	EPA, 2007, model

Table 1.3
Soil Bioaccumulation Factors
Used For Plants and Soil Invertebrates
Garvey Elevator Superfund Site
Hastings, Nebraska

	Log		Soil-Plant BAF (dry weight)		Kww	Koc	Kd	Soil-Invertebrate BAF (dry weight)	
Analyte	**Kow**	**Plant BCF**	**Value**	**Reference**	**(L/kg worm dry weight)**	**(L/kg soil dry weight)**	**Kd = Foc*Koc**	**Value**	**Reference**
Pesticides									
D-BHC****	4.14	0.10	1.263	EPA, 2007, model	3.15E+03	6.31E+03	6.31E+01	49.93	EPA, 2007, model
Dieldrin			0.41	EPA, 2007				14.70	EPA, 2007
Endosulfan I	4.1	0.12	1.311	EPA, 2007, model	2.31E+02	2.14E+03	2.14E+01	10.78	EPA, 2007, model
Endosulfan II	4.1	0.12	1.311	EPA, 2007, model	2.31E+02	2.14E+03	2.14E+01	10.78	EPA, 2007, model
Endrin	5.06	-0.27	0.535	EPA, 2007, model	1.58E+03	1.23E+04	1.23E+02	12.83	EPA, 2007, model
G-BHC	3.73	0.27	1.852	EPA, 2007, model	1.10E+02	1.07E+03	1.07E+01	10.27	EPA, 2007, model
Heptachlor	6.26	-0.76	0.174	EPA, 2007, model	1.75E+04	1.41E+06	1.41E+04	1.24	EPA, 2007, model
Heptachlor Epoxide	5	-0.25	0.566	EPA, 2007, model	1.40E+03	8.32E+04	8.32E+02	1.68	EPA, 2007, model
DDD								$\ln(C_e) = 0.6975 * \ln(C_s) + 1.1613$	EPA, 2007
DDE			See Total DDT					$\ln(C_e) = 0.8804 * \ln(C_s) + 2.4771$	EPA, 2007
DDT								$\ln(C_e) = 0.8689 * \ln(C_s) + 2.1247$	EPA, 2007
Total DDT			$\ln(C_p) = 0.7524 * \ln(C_s) - 2.5119$	EPA, 2007				11.20	EPA, 2007
p,p'-Methoxychlor	5.08	-0.28	0.525	EPA, 2007, model	1.64E+03	9.77E+04	9.77E+02	1.68	EPA, 2007, model
Toxaphene	5.5	-0.45	0.355	EPA, 2007, model	3.81E+03	2.57E+05	2.57E+03	1.48	EPA, 2007, model
PCBs	5.58	-0.48	0.329	EPA, 2007, model	4.47E+03	3.09E+05	3.09E+03	1.45	EPA, 2007, model

Notes:

EPA, 2007. Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs): Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs. OSWER Directive 9285.7-55, Revised April 2007.

Sample, B.E., J.J. Beauchamp, R.A. Efroymson, G.W.Suter II, and T.L Ashwood (1998). Development and Validation of Bioaccumulation Models for Earthworms. ES/ER/TM-220. February 1998.

Bechtal Jacobs (1998). Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants. BJC/OR-133. September 1998.

Soil-Plant BAF Model:

log BAF = -0.4057(log Kow) + 1.781

EPA, 2007. Figure 5. Data for Rinsed Foliage

Soil-Earthworm BAF Model:

$\log K_{ww} = 0.87 * \log K_{ow} - 2$ (model from Jager, 1998)

Converted from wet weight to dry weight assuming 16% solids

$K_d = f_{oc} * K_{oc}$

$f_{oc} = 0.01$ (1%)

$BAF = K_{ww}$ (L/kg worm dry weight)/K_d (L/kg soil dry weight)

Koc and Log Kow values from Soil Screening Guidance: Technical Background Document, EPA/540/R95/128, May 1996.

BAF = bioaccumulation factor

VOC = volatile organic compound

SVOC = semi volatile organic compound

PCB = polychlorinated biphenyl

* Log Kow from http://www.inchem.org/documents/icsc/icsc/eics0676.htm

** Log Kow and Koc from Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms, EPA/600/R-02/016, 2008.

*** Log Kow and Koc from HDSB, http://toxnet.nlm.nih.gov/.

**** Log Kow and Koc from ATSDR Toxicological Profile for Hexachlorocyclohexane, August 2005.

Table 1.4
Soil Bioaccumulation Factors Used For Small Mammals
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Soil-Mammal BAF (dry weight)	
	Value	Reference
VOCs		
1,2,4-Trichlorobenzene	1	Default
1,2-Dichlorobenzene	1	Default
1,3-Dichlorobenzene	1	Default
1,4-Dichlorobenzene	1	Default
1,1,2,2-Tetrachloroethane	1	Default
SVOCs		
1,2,4,5-Tetrachlorobenzene	1	Default
4-Bromophenyl-phenylether	1	Default
4-Chlorophenyl-phenylether	1	Default
Hexachlorobenzene	1	Default
Hexachlorobutadiene	1	Default
Hexachlorocyclopentadiene	1	Default
Hexachloroethane	1	Default
PAHs		
2-Methylnaphthalene	0	Note A
Acenaphthene	0	EPA, 2007a
Acenaphthylene	0	EPA, 2007a
Anthracene	0	EPA, 2007a
Fluoranthene	0	EPA, 2007a
Fluorene	0	EPA, 2007a
Naphthalene	0	EPA, 2007a
Phenanthrene	0	EPA, 2007a
Total LMW PAHs	0	EPA, 2007a
Benzo(a)anthracene	0	EPA, 2007a
Benzo(a)pyrene	0	EPA, 2007a
Benzo(b)fluoranthene	0	EPA, 2007a
Benzo(ghi)perylene	0	EPA, 2007a
Benzo(k)fluoranthene	0	EPA, 2007a
Chrysene	0	EPA, 2007a
Dibenz(a,h)anthracene	0	EPA, 2007a
Indeno(1,2,3-c,d)pyrene	0	EPA, 2007a
Pyrene	0	EPA, 2007a
Total HMW PAHs	0	EPA, 2007a
Pesticides		
A-BHC	1	Default
Aldrin	1	Default
B-BHC	1	Default
Chlordane	1	Default
D-BHC	1	Default
Dieldrin	1.2*(Cworm)	EPA, 2007a
Endosulfan I	1	Default
Endosulfan II	1	Default
Endrin	1	Default
G-BHC	1	Default
Heptachlor	1	Default
Heptachlor Epoxide	1	Default
DDD	1	Default
DDE	ln(Cm) = 0.641*ln(Cworm) + 3.6401	EPA, 2007a
DDT	ln(Cm) = 0.7254*ln(Cworm) + 1.1788	EPA, 2007a
Total DDT	0.43*(Cworm)	EPA, 2007a
p,p'-Methoxychlor	1	Default
Toxaphene	1	Default
PCBs	1	Default

EPA, 2007. Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs): Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs. OSWER Directive 9285.7-55, Revised April 2007.
Sample, B.E., J.J. Beauchamp, R.A. Efroymson, and G.W. Suter II, 1998. Development and Validation of Bioaccumulation Models for Small Mammals. ES/ER/TM-219.
A = based on structural similarity to naphthalene

Table 1.5
Comparison to USEPA Ecological Soil Screening Levels
Garvey Elevator Superfund Site
Hastings, Nebraska

Sample Location						Maximum Detected Concentration or Maximum Reporting Limit (µg/kg)	SB-01	SB-02	SB-05	SB-07	SB-09	SB-10	SB-11	SB-12	SB-16	SB-17	SB-17	SB-18
EPA Lab ID							**4518-62**	**4518-138**	**4518-15**	**4518-51**	**4518-46**	**4518-133**	**4518-40**	**4518-35**	**4518-117**	**4518-109**	**4518-109FD**	**4518-121**
Sample Collection Depth (ft bgs)		**Eco-SSLs (µg/kg)**					**0.5-1**	**0.5-1**	**1.3-2.3**	**1.5-2**	**0-1**	**1.5-2**	**0-1**	**0-1**	**0.5-1**	**0-1**	**0-1**	**0-0.5**
Sample Collection Date	**Detection Frequency**	**Plants**	**Soil Invertebrates**	**Birds**	**Mammals**		**8/4/2009**	**8/8/2009**	**8/5/2009**	**8/4/2009**	**8/4/2009**	**8/7/2009**	**8/4/2009**	**8/4/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**	**8/6/2009**
Pentachlorophenol	0/15	5,000	31,000	2,100	2,800	960	NA	NA	400 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	0/15	Evaluated as sum of low molecular weight PAHs				380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sum of Low MW PAHs	0/15	NSV	29,000	NSV	100,000	3040												
Benzo(a)anthracene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1/15					230	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1/15					230	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1/15					230	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0/15					380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	0/15	Evaluated as sum of high molecular weight PAHs				380	NA	NA	200 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sum of High MW PAHs	1/15	NSV	18,000	NSV	1,100	2970												
Dieldrin	2/22	NSV	NSV	22	4.9	13	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U
p,p'-DDD	0/22					4	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U
p,p'-DDE	1/22					2.1	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U
p,p'-DDT	1/22	Evaluated as sum of DDT and metabolites				2.1	NA	NA	4.0 U	NA	NA	NA	NA	NA	NA	3.9 U	3.9 U	4.0 U
DDT and Metabolites	1/22	NSV	NSV	93	21	8.2												

Sample Location						Maximum Detected Concentration or Maximum Reporting Limit (µg/kg)	SB-19	SB-20	SB-21	SB-23	SB-24	SB-26	SB-27	SB-29	SB-30	SB-31	SB-32	SD-01
EPA Lab ID							4518-125	4518-28	4518-31	4518-24	4518-18	4518-81	4518-89	4518-98	4518-112	4518-10	4518-100	4525-10
Sample Collection Depth (ft bgs)		Eco-SSLs (µg/kg)					0-0.5	0-1.5	0-0.5	0.5-1.5	0-1	1-2	0-1	0-1	0-1	0-1	0-1	
Sample Collection Date	Detection Frequency	Plants	Soil Invertebrates	Birds	Mammals		8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/5/2009	8/5/2009	8/5/2009	8/6/2009	8/5/2009	8/6/2009	8/19/2010
Pentachlorophenol	0/15	5,000	31,000	2,100	2,800	960	NA	NA	NA	400 UJ	400 UJ	NA	NA	NA	NA	390 UJ	NA	250 UJ
2-Methylnaphthalene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Acenaphthene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Acenaphthylene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Anthracene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Fluoranthene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Fluorene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Naphthalene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Phenanthrene	0/15	Evaluated as sum of low molecular weight PAHs				380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Sum of Low MW PAHs	0/15	NSV	29,000	NSV	100,000	3040												
Benzo(a)anthracene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Benzo(a)pyrene	1/15					230	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Benzo(b)fluoranthene	1/15					230	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Benzo(g,h,i)perylene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 UJ
Benzo(k)fluoranthene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Chrysene	1/15					230	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Dibenz(a,h)anthracene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Indeno(1,2,3-cd)pyrene	0/15					380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Pyrene	0/15	Evaluated as sum of high molecular weight PAHs				380	NA	NA	NA	210 U	210 U	NA	NA	NA	NA	200 U	NA	99 U
Sum of High MW PAHs	1/15	NSV	18,000	NSV	1,100	2970												
Dieldrin	2/22	NSV	NSV	22	4.9	13	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	3.9 U	4.0 U	0.69 U
p,p'-DDD	0/22					4	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	3.9 U	4.0 U	0.92 U
p,p'-DDE	1/22					2.1	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	3.9 U	4.0 U	1.2 U
p,p'-DDT	1/22	Evaluated as sum of DDT and metabolites				2.1	3.6 U	4.0 U	4.0 U	4.0 U	4.0 U	NA	NA	NA	NA	3.9 U	4.0 U	1.2 UJ
DDT and Metabolites	1/22	NSV	NSV	93	21	8.2												

Sample Location						Maximum Detected Concentration or Maximum Reporting Limit (µg/kg)	SD-02	SD-03	SD-04	SD-05	SD-06	SD-08	SD-08	SD-09	SD-10	SD-11
EPA Lab ID							4525-11	4525-1	4525-8	4525-9	4525-2	4525-3	4525-3FD	4525-5	4525-6	4525-7
Sample Collection Depth (ft bgs)		Eco-SSLs (µg/kg)														
Sample Collection Date	Detection Frequency	Plants	Soil Invertebrates	Birds	Mammals		8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010	8/19/2010
Pentachlorophenol	0/15	5,000	31,000	2,100	2,800	960	250 UJ	490 UJ	490 UJ	230 UJ	230 UJ	220 UJ	220 UJ	960 UJ	470 UJ	470 UJ
2-Methylnaphthalene	0/15					380	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Acenaphthene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Acenaphthylene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Anthracene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Fluoranthene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Fluorene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Naphthalene	0/15					380	100 U	200 UJ	190 UJ	93 U	90 U	87 U	89 U	380 UJ	190 UJ	190 UJ
Phenanthrene	0/15	Evaluated as sum of low molecular weight PAHs				380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Sum of Low MW PAHs	0/15	NSV	29,000	NSV	100,000	3040										
Benzo(a)anthracene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Benzo(a)pyrene	1/15					230	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(b)fluoranthene	1/15					230	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Benzo(g,h,i)perylene	0/15					380	100 UJ	200 UJ	190 UJ	93 UJ	90 UJ	87 UJ	89 UJ	380 UJ	190 UJ	190 UJ
Benzo(k)fluoranthene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Chrysene	1/15					230	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	**230**	190 U
Dibenz(a,h)anthracene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Indeno(1,2,3-cd)pyrene	0/15					380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Pyrene	0/15	Evaluated as sum of high molecular weight PAHs				380	100 U	200 UJ	190 U	93 U	90 U	87 U	89 U	380 U	190 U	190 U
Sum of High MW PAHs	1/15	NSV	18,000	NSV	1,100	2970										
Dieldrin	2/22	NSV	NSV	22	4.9	13	0.7 U	0.73 U	0.71 U	0.69 U	0.65 U	0.64 U	0.66 U	**0.84**	**13**	0.68 U
p,p'-DDD	0/22					4	0.93 U	0.98 U	0.94 U	0.92 U	0.87 U	0.85 U	0.88 U	0.92 U	0.94 U	0.91 U
p,p'-DDE	1/22					2.1	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	**2.1 J**	1.1 U
p,p'-DDT	1/22	Evaluated as sum of DDT and metabolites				2.1	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	**2.1 J**	5.7 U
DDT and Metabolites	1/22	NSV	NSV	93	21	8.2										

Table 1.6
Comparison to Soil Benchmark Concentrations
Garvey Elevator Superfund Site
Hastings, Nebraska

Sample Location		Maximum Detected Concentration or Maximum Reporting Limit (µg/kg)	Screening value (µg/kg) and source	
EPA Lab ID				
Sample Collection Depth (ft bgs)				
Sample Collection Date	Detection Frequency			
VOCs				
1,1,1-Trichloroethane	0/27	9.1	100	BC Ag
1,1,2,2-Tetrachloroethane	0/27	9.1	100	CCME
1,1,2-Trichloroethane	0/27	9.1	100	BC Ag
1,1,2-Trichlorotrifluoroethane	0/27	9.1	NSV	
1,1-Dichloroethane	0/27	9.1	100	BC Ag
1,1-Dichloroethene	0/27	9.1	100	CCME
1,2,3-Trichlorobenzene	0/27	9.1	20000	ORNL, 1997b
1,2,4-Trichlorobenzene	0/27	9.1	20000	ORNL, 1997b
1,2-Dibromo-3-Chloropropane	0/27	9.1	35.2	EPA Region 5
1,2-Dibromoethane	0/27	9.1	1230	EPA Region 5
1,2-Dichlorobenzene	0/27	9.1	100	BC Ag
1,2-Dichloroethane	0/27	9.1	22	Ont Ag
1,2-Dichloropropane	0/27	9.1	700000	ORNL, 1997b
1,3-Dichlorobenzene	0/27	9.1	100	BC Ag
1,4-Dichlorobenzene	0/27	9.1	20000	ORNL, 1997b
2-Butanone	19/27	33	270	Ont Ag
2-Hexanone	0/27	14	12600	EPA Region 5
4-Methyl-2-Pentanone	0/27	14	480	Ont Ag
Acetone	26/27	520	3500	Ont Ag
Benzene	0/27	9.1	50	CCME Ag
Bromochloromethane	0/16	9.1	NSV	
Bromodichloromethane	0/27	9.1	120	Ont Ag
Bromoform	0/27	9.1	110	Ont Ag
Bromomethane	0/27	9.1	61	Ont Ag
Carbon Disulfide	0/27	9.1	94.1	EPA Region 5
Carbon Tetrachloride	0/27	9.1	100	Ont Ag
Chlorobenzene	0/27	9.1	40000	ORNL, 1997b
Chloroethane	0/27	9.1	NSV	
Chloroform	2/27	13	100	BC Ag
Chloromethane (methyl chloride)	0/27	9.1	10400	EPA Region 5
cis-1,2-Dichloroethene	0/27	9.1	2300	Ont Ag
cis-1,3-Dichloropropene	0/27	9.1	100	BC Ag
Cyclohexane	0/27	9.1	10	RIVM
Dibromochloromethane	0/27	9.1	90	Ont Ag
Dichlorodifluoromethane	0/27	9.1	39500	EPA Region 5
Ethyl Benzene	0/27	9.1	50	RIVM
Isopropylbenzene	0/27	9.1	NSV	
m and/or p-Xylene	0/27	18	50	RIVM
Methyl Acetate	1/27	7.3	NSV	
Methyl tert-butyl ether	0/27	9.1	5700	Ont Ag
Methylcyclohexane	0/27	9.1	NSV	
Methylene Chloride	0/27	9.1	100	BC Ag
o-Xylene	0/27	9.1	50	RIVM
Styrene	0/27	9.1	300000	ORNL, 1997a
Tetrachloroethene	0/27	9.1	10	RIVM
Toluene	1/27	37	200000	ORNL, 1997a
trans-1,2-Dichloroethene	0/27	9.1	4100	Ont Ag
trans-1,3-Dichloropropene	0/27	9.1	100	BC Ag
Trichloroethene	0/27	9.1	1	RIVM
Trichlorofluoromethane	0/27	9.1	16400	EPA Region 5
Vinyl Chloride	0/27	9.1	3	Ont Ag

Table 1.6
Comparison to Soil Benchmark Concentrations
Garvey Elevator Superfund Site
Hastings, Nebraska

Sample Location		Maximum Detected Concentration or Maximum Reporting Limit (µg/kg)	Screening value (µg/kg) and source	
EPA Lab ID				
Sample Collection Depth (ft bgs)				
Sample Collection Date	Detection Frequency			
SVOCs (µg/kg)				
1,2,4,5-Tetrachlorobenzene	0/4	210	2020	EPA Region 5
2,4,5-Trichlorophenol	0/15	960	4000	ORNL, 1997a
2,4,6-Trichlorophenol	0/15	960	10000	ORNL, 1997b
2,4-Dichlorophenol	0/15	960	50	BC Ag
2,4-Dimethylphenol	0/15	380	10	EPA Region 5
2,4-Dinitrophenol	0/15	1900	20000	ORNL, 1997a
2,4-Dinitrotoluene	0/15	380	660	Ont Ag
2,6-Dinitrotoluene	0/15	380	32.8	EPA Region 5
2-Chloronaphthalene	0/15	380	12.2	EPA Region 5
2-Chlorophenol	0/15	960	50	BC Ag
2-Methylphenol	0/15	960	10	CCME Ag
2-Nitroaniline	0/15	960	74100	EPA Region 5
2-Nitrophenol	0/15	960	100	BC Ag
3,3'-Dichlorobenzidine	0/15	1900	1300	Ont Ag
3-Nitroaniline	0/15	960	3160	EPA Region 5
4,6-Dinitro-2-methylphenol (o-cresol)	0/15	1900	100	BC Ag
4-Bromophenyl-phenylether	0/15	380	NSV	
4-Chloro-3-methylphenol	0/15	960	7950	EPA Region 5
4-Chloroaniline	0/15	1900	1300	Ont Ag
4-Chlorophenyl-phenylether	0/15	380	NSV	
4-Methylphenol	0/15	960	10	CCME Ag
4-Nitroaniline	0/15	1900	21900	EPA Region 5
4-Nitrophenol	0/15	1900	7000	ORNL, 1997b
Acetophenone	0/4	210	300000	EPA Region 5
Atrazine	0/4	210	50	RIVM
Benzaldehyde	0/4	210	NSV	
Benzoic Acid	1/11	590 J	NSV	
Benzyl Alcohol	0/11	960	65800	EPA Region 5
Biphenyl	0/4	210	60000	ORNL, 1997a
bis(2-Chloroethoxy)methane	0/15	380	302	EPA Region 5
bis(2-Chloroethyl)ether	0/15	380	660	Ont Ag
bis(2-Chloroisopropyl)ether	0/15	380	660	Ont Ag
bis(2-Ethylhexyl)phthalate	0/15	960	30000	BC Ag
Butylbenzylphthalate	0/15	960	239	EPA Region 5
Caprolactam	0/4	210	NSV	
Carbazole	0/15	960	NSV	
Dibenzofuran	0/15	380	NSV	
Diethylphthalate	0/15	380	100000	ORNL, 1997a
Dimethylphthalate	0/15	380	200000	ORNL, 1997b
Di-n-butylphthalate	0/15	960	200000	ORNL, 1997a
Di-n-octylphthalate	0/15	960	709000	EPA Region 5
Hexachlorobenzene	0/15	380	2.5	RIVM
Hexachlorobutadiene	0/15	380	380	Ont Ag
Hexachlorocyclopentadiene	0/15	380	10000	ORNL, 1997a
Hexachloroethane	0/15	380	3800	Ont Ag
Isophorone	0/15	380	139000	EPA Region 5
Nitrobenzene	0/15	380	40000	ORNL, 1997b
N-nitroso-di-n-propylamine	0/15	960	NSV	
N-nitrosodiphenylamine	0/15	380	20000	ORNL, 1997b
Phenol	0/15	380	30000	ORNL, 1997b

Table 1.6
Comparison to Soil Benchmark Concentrations
Garvey Elevator Superfund Site
Hastings, Nebraska

Sample Location		Maximum Detected Concentration or Maximum Reporting Limit (µg/kg)	Screening value (µg/kg) and source	
EPA Lab ID				
Sample Collection Depth (ft bgs)				
Sample Collection Date	Detection Frequency			
Pesticides (µg/kg)				
A-BHC	0/22	2.1	2.5	RIVM
Aldrin	0/22	2.1	2.5	RIVM
B-BHC	0/22	2.1	1	RIVM
cis-Chlordane	0/11	2.1	290	Ont Ag
Chlordane, technical	1/11	12 J	290	Ont Ag
D-BHC	0/22	2.1	9940	EPA Region 5
Endosulfan I	0/22	2.1	180	Ont Ag
Endosulfan II	0/22	4.5	180	Ont Ag
Endosulfan Sulfate	0/22	9.4	180	Ont Ag
Endrin	0/22	9.4	1	RIVM
Endrin Aldehyde	0/22	12	10.5	EPA Region 5
Endrin Ketone	0/22	4	NSV	
G-BHC	0/22	2.1	50	RIVM
Heptachlor	0/22	7	84	Ont Ag
Heptachlor Epoxide	1/22	3.1 J	60	Ont Ag
p,p'-Methoxychlor	0/22	21	4000	Ont Ag
Toxaphene	0/22	230	119	EPA Region 5
trans-Chlordane	0/11	2.1	290	Ont Ag
UAA Pesticides (µg/kg)				
Malathion	0/16	81.1	NSV	
Herbicides (µg/kg)				
2,4,5-T(richlorophenoxyacetic acid)	0/16	11.8	596	EPA Region 5
2,4,5-TP (Silvex)	0/16	10	109	EPA Region 5
2,4-D	0/16	20	27.2	EPA Region 5
PCBs (µg/kg)				
Aroclor 1016	0/22	40		
Aroclor 1221	0/22	40		
Aroclor 1232	0/22	40		
Aroclor 1242	0/22	40		
Aroclor 1248	1/22	200		
Aroclor 1254	0/22	40		
Aroclor 1260	0/22	120		
Aroclor 1262	0/11	40		
Aroclor 1268	0/11	40		
Total Aroclor	1/22	400	40000	ORNL, 1997a

BC Ag = British Columbia Agricultural
CCME Ag = Canadian Council of Ministers of the Environment Agricultural
EPA Region 5 = EPA Region 5 Ecological Screening Levels for Soil
Ont Ag = Ontario Agricultural
ORNL, 1997a = Oak Ridge National Laboratory Screening Benchmarks for Plants (see references in text)

ORNL, 1997b = Oak Ridge National Laboratory Screening Benchmarks for Terrestrial Invertebrates (see references in text)
RIVM = Netherlands soil/sediment target value

Table 1.7
Exposure of Terrestrial Wildlife Receptors to Surface Soil, Initial Screening
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
1,2,4-Trichlorobenzene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0091	100 % foliage/seeds	1.30E-02	9.85E-02	9.10E-03	2.71E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0091	100% earthworms	1.30E-02	9.85E-02	9.10E-03	2.14E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0091	100% small mammals	1.30E-02	9.85E-02	9.10E-03	3.40E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0091	100 % foliage	1.30E-02	9.85E-02	9.10E-03	1.16E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.209	0.03	0.0091	100% earthworms	1.30E-02	9.85E-02	9.10E-03	2.06E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0091	100% small mammals	1.30E-02	9.85E-02	9.10E-03	1.23E-03	NSV	
1,2-Dichlorobenzene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0091	100 % foliage/seeds	2.23E-02	8.89E-02	9.10E-03	4.48E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0091	100% earthworms	2.23E-02	8.89E-02	9.10E-03	1.93E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0091	100% small mammals	2.23E-02	8.89E-02	9.10E-03	3.40E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0091	100 % foliage	2.23E-02	8.89E-02	9.10E-03	1.98E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.209	0.03	0.0091	100% earthworms	2.23E-02	8.89E-02	9.10E-03	1.86E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0091	100% small mammals	2.23E-02	8.89E-02	9.10E-03	1.23E-03	NSV	
1,3-Dichlorobenzene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0091	100 % foliage/seeds	2.23E-02	8.89E-02	9.10E-03	4.48E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0091	100% earthworms	2.23E-02	8.89E-02	9.10E-03	1.93E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0091	100% small mammals	2.23E-02	8.89E-02	9.10E-03	3.40E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0091	100 % foliage	2.23E-02	8.89E-02	9.10E-03	1.98E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.209	0.03	0.0091	100% earthworms	2.23E-02	8.89E-02	9.10E-03	1.86E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0091	100% small mammals	2.23E-02	8.89E-02	9.10E-03	1.23E-03	NSV	
1.4-Dichlorobenzene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0091	100 % foliage/seeds	2.25E-02	8.71E-02	9.10E-03	4.52E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0091	100% earthworms	2.25E-02	8.71E-02	9.10E-03	1.90E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0091	100% small mammals	2.25E-02	8.71E-02	9.10E-03	3.40E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0091	100 % foliage	2.25E-02	8.71E-02	9.10E-03	2.00E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.209	0.03	0.0091	100% earthworms	2.25E-02	8.71E-02	9.10E-03	1.83E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0091	100% small mammals	2.25E-02	8.71E-02	9.10E-03	1.23E-03	NSV	
1,1,2,2-Tetrachloroethane											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0091	100 % foliage/seeds	5.89E-02	7.32E-02	9.10E-03	1.14E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0091	100% earthworms	5.89E-02	7.32E-02	9.10E-03	1.60E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0091	100% small mammals	5.89E-02	7.32E-02	9.10E-03	3.40E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0091	100 % foliage	5.89E-02	7.32E-02	9.10E-03	5.18E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.209	0.03	0.0091	100% earthworms	5.89E-02	7.32E-02	9.10E-03	1.53E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0091	100% small mammals	5.89E-02	7.32E-02	9.10E-03	1.23E-03	NSV	
1,2,4,5-Tetrachlorobenzene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.21	100 % foliage/seeds	1.30E-01	1.08E+01	2.10E-01	3.03E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.21	100% earthworms	1.30E-01	1.08E+01	2.10E-01	2.33E+00	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.21	100% small mammals	1.30E-01	1.08E+01	2.10E-01	7.84E-03	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.21	100 % foliage	1.30E-01	1.08E+01	2.10E-01	1.20E-02	NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.209	0.03	0.21	100% earthworms	1.30E-01	1.08E+01	2.10E-01	2.27E+00	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.21	100% small mammals	1.30E-01	1.08E+01	2.10E-01	2.85E-02	NSV	

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
4-Bromophenyl-phenylether											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	2.15E-01	6.38E-01	3.80E-01	5.09E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	2.15E-01	6.38E-01	3.80E-01	1.50E-01	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	2.15E-01	6.38E-01	3.80E-01	1.42E-02	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.38	100 % foliage	2.15E-01	6.38E-01	3.80E-01	1.99E-02	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.38	100% earthworms	2.15E-01	6.38E-01	3.80E-01	1.36E-01	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.38	100% small mammals	2.15E-01	6.38E-01	3.80E-01	5.15E-02	NSV	
4-Chlorophenyl-phenylether											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	5.08E-01	3.72E+00	3.80E-01	1.06E-01	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	5.08E-01	3.72E+00	3.80E-01	8.10E-01	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	5.08E-01	3.72E+00	3.80E-01	1.42E-02	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.38	100 % foliage	5.08E-01	3.72E+00	3.80E-01	4.55E-02	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.38	100% earthworms	5.08E-01	3.72E+00	3.80E-01	7.81E-01	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.38	100% small mammals	5.08E-01	3.72E+00	3.80E-01	5.15E-02	NSV	
Hexachlorobenzene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	9.35E-02	5.75E+00	3.80E-01	2.78E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	9.35E-02	5.75E+00	3.80E-01	1.24E+00	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	9.35E-02	5.75E+00	3.80E-01	1.42E-02	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.38	100 % foliage	9.35E-02	5.75E+00	3.80E-01	9.24E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.38	100% earthworms	9.35E-02	5.75E+00	3.80E-01	1.20E+00	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.38	100% small mammals	9.35E-02	5.75E+00	3.80E-01	5.15E-02	NSV	
Hexachlorobutadiene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	2.57E-01	6.76E-01	3.80E-01	5.88E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	2.57E-01	6.76E-01	3.80E-01	1.58E-01	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	2.57E-01	6.76E-01	3.80E-01	1.42E-02	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.38	100 % foliage	2.57E-01	6.76E-01	3.80E-01	2.35E-02	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.38	100% earthworms	2.57E-01	6.76E-01	3.80E-01	1.44E-01	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.38	100% small mammals	2.57E-01	6.76E-01	3.80E-01	5.15E-02	NSV	
Hexachlorocyclopentadiene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	1.49E-01	5.81E-01	3.80E-01	3.84E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	1.49E-01	5.81E-01	3.80E-01	1.38E-01	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	1.49E-01	5.81E-01	3.80E-01	1.42E-02	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.38	100 % foliage	1.49E-01	5.81E-01	3.80E-01	1.41E-02	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.38	100% earthworms	1.49E-01	5.81E-01	3.80E-01	1.24E-01	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.38	100% small mammals	1.49E-01	5.81E-01	3.80E-01	5.15E-02	NSV	
Hexachloroethane											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	5.47E-01	4.03E+00	3.80E-01	1.14E-01	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	5.47E-01	4.03E+00	3.80E-01	8.75E-01	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	5.47E-01	4.03E+00	3.80E-01	1.42E-02	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.38	100 % foliage	5.47E-01	4.03E+00	3.80E-01	4.89E-02	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.38	100% earthworms	5.47E-01	4.03E+00	3.80E-01	8.44E-01	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.38	100% small mammals	5.47E-01	4.03E+00	3.80E-01	5.15E-02	NSV	
2-Methylnaphthalene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	1.72E-01	1.16E+00	0.00E+00	4.27E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	1.72E-01	1.16E+00	0.00E+00	2.61E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	1.72E-01	1.16E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Acenaphthene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	8.79E-03	5.59E-01	0.00E+00	1.17E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	8.79E-03	5.59E-01	0.00E+00	1.33E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	8.79E-03	5.59E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	

Table 1.7
Exposure of Terrestrial Wildlife Receptors to Surface Soil, Initial Screening
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
Acenaphthylene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	1.48E-01	8.70E+00	0.00E+00	3.82E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	1.48E-01	8.70E+00	0.00E+00	1.88E+00	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	1.48E-01	8.70E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Anthracene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	1.75E-01	9.20E-01	0.00E+00	4.33E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	1.75E-01	9.20E-01	0.00E+00	2.10E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	1.75E-01	9.20E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Fluoranthene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	1.90E-01	1.16E+00	0.00E+00	4.61E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	1.90E-01	1.16E+00	0.00E+00	2.61E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	1.90E-01	1.16E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Fluorene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	8.79E-03	3.64E+00	0.00E+00	1.17E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	8.79E-03	3.64E+00	0.00E+00	7.92E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	8.79E-03	3.64E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Naphthalene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	4.64E+00	1.67E+00	0.00E+00	8.91E-01	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	4.64E+00	1.67E+00	0.00E+00	3.71E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	4.64E+00	1.67E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Phenanthrene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	4.65E-01	6.54E-01	0.00E+00	9.83E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	4.65E-01	6.54E-01	0.00E+00	1.53E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	4.65E-01	6.54E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Total LMW PAHs											
	Mourning dove (*Zenaida macrocura*)								1.18E+00	1653	0.0007
	American woodcock (*Scolopax minor*)								4.06E+00	1653	0.002
	Red-tailed hawk (*Buteo jamaicensis*)								6.12E-03	1653	0.000004
Benzo(a)anthracene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	3.75E-02	6.04E-01	0.00E+00	1.72E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	3.75E-02	6.04E-01	0.00E+00	1.43E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	3.75E-02	6.04E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Benzo(a)pyrene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.23	100 % foliage/seeds	3.04E-02	3.06E-01	0.00E+00	1.18E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.23	100% earthworms	3.04E-02	3.06E-01	0.00E+00	7.35E-02	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.23	100% small mammals	3.04E-02	3.06E-01	0.00E+00	4.63E-04	NA--PAH Intakes Summed Below	
Benzo(b)fluoranthene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.23	100 % foliage/seeds	7.13E-02	5.98E-01	0.00E+00	1.96E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.23	100% earthworms	7.13E-02	5.98E-01	0.00E+00	1.36E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.23	100% small mammals	7.13E-02	5.98E-01	0.00E+00	4.63E-04	NA--PAH Intakes Summed Below	
Benzo(g,h,i)perylene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	1.25E-01	1.12E+00	0.00E+00	3.39E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	1.25E-01	1.12E+00	0.00E+00	2.52E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	1.25E-01	1.12E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
Benzo(k)fluoranthene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	5.03E-02	9.88E-01	0.00E+00	1.96E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	5.03E-02	9.88E-01	0.00E+00	2.25E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	5.03E-02	9.88E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Chrysene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.23	100 % foliage/seeds	2.78E-02	5.27E-01	0.00E+00	1.14E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.23	100% earthworms	2.78E-02	5.27E-01	0.00E+00	1.21E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.23	100% small mammals	2.78E-02	5.27E-01	0.00E+00	4.63E-04	NA--PAH Intakes Summed Below	
Dibenz(a,h)anthracene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	4.94E-02	8.78E-01	0.00E+00	1.94E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	4.94E-02	8.78E-01	0.00E+00	2.01E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	4.94E-02	8.78E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Indeno(1,2,3-c,d)pyrene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	4.18E-02	1.09E+00	0.00E+00	1.80E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	4.18E-02	1.09E+00	0.00E+00	2.46E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	4.18E-02	1.09E+00	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Pyrene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.38	100 % foliage/seeds	2.74E-01	6.65E-01	0.00E+00	6.20E-02	NA--PAH Intakes Summed Below	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.38	100% earthworms	2.74E-01	6.65E-01	0.00E+00	1.56E-01	NA--PAH Intakes Summed Below	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.38	100% small mammals	2.74E-01	6.65E-01	0.00E+00	7.65E-04	NA--PAH Intakes Summed Below	
Total HMW PAHs											
	Mourning dove (*Zenaida macrocura*)								2.13E-01	2	0.1
	American woodcock (*Scolopax minor*)								1.55E+00	2	0.8
	Red-tailed hawk (*Buteo jamaicensis*)								5.98E-03	2	0.003
alpha-BHC*											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0021	100 % foliage/seeds	3.64E-03	2.16E-02	2.10E-03	7.48E-04	0.56	0.001
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0021	100% earthworms	3.64E-03	2.16E-02	2.10E-03	4.69E-03	0.56	0.008
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0021	100% small mammals	3.64E-03	2.16E-02	2.10E-03	7.84E-05	0.56	0.0001
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0021	100 % foliage	3.64E-03	2.16E-02	2.10E-03	3.25E-04	2.69	0.0001
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0021	100% earthworms	3.64E-03	2.16E-02	2.10E-03	4.53E-03	3.52	0.001
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0021	100% small mammals	3.64E-03	2.16E-02	2.10E-03	2.85E-04	0.014	0.02
Aldrin											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0021	100 % foliage/seeds	2.92E-04	2.42E-03	2.10E-03	1.11E-04	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0021	100% earthworms	2.92E-04	2.42E-03	2.10E-03	5.91E-04	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0021	100% small mammals	2.92E-04	2.42E-03	2.10E-03	7.84E-05	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0021	100 % foliage	2.92E-04	2.42E-03	2.10E-03	3.14E-05	0.336	0.0001
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0021	100% earthworms	2.92E-04	2.42E-03	2.10E-03	5.18E-04	0.44	0.001
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0021	100% small mammals	2.92E-04	2.42E-03	2.10E-03	2.85E-04	0.154	0.002
beta-BHC**											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0021	100 % foliage/seeds	3.61E-03	2.15E-02	2.10E-03	7.41E-04	0.56	0.001
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0021	100% earthworms	3.61E-03	2.15E-02	2.10E-03	4.68E-03	0.56	0.008
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0021	100% small mammals	3.61E-03	2.15E-02	2.10E-03	7.84E-05	0.56	0.0001
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0021	100 % foliage	3.61E-03	2.15E-02	2.10E-03	3.22E-04	0.67	0.0005
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0021	100% earthworms	3.61E-03	2.15E-02	2.10E-03	4.51E-03	0.88	0.005
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0021	100% small mammals	3.61E-03	2.15E-02	2.10E-03	2.85E-04	0.31	0.0009

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
Chlordane											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.012	100 % foliage/seeds	1.98E-03	3.16E-02	1.20E-02	6.93E-04	2.1	0.0003
	American woodcock (*Scolopax minor*)	0.214	0.164	0.012	100% earthworms	1.98E-03	3.16E-02	1.20E-02	7.17E-03	2.1	0.003
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.012	100% small mammals	1.98E-03	3.16E-02	1.20E-02	4.48E-04	2.1	0.0002
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.012	100 % foliage	1.98E-03	3.16E-02	1.20E-02	2.07E-04	4.2	0.00005
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.012	100% earthworms	1.98E-03	3.16E-02	1.20E-02	6.67E-03	5.5	0.001
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.012	100% small mammals	1.98E-03	3.16E-02	1.20E-02	1.63E-03	1.9	0.0009
delta-BHC*											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0021	100 % foliage/seeds	2.65E-03	1.05E-01	2.10E-03	5.59E-04	0.56	0.001
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0021	100% earthworms	2.65E-03	1.05E-01	2.10E-03	2.25E-02	0.56	0.04
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0021	100% small mammals	2.65E-03	1.05E-01	2.10E-03	7.84E-05	0.56	0.0001
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0021	100 % foliage	2.65E-03	1.05E-01	2.10E-03	2.38E-04	2.69	0.0001
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0021	100% earthworms	2.65E-03	1.05E-01	2.10E-03	2.19E-02	3.52	0.006
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0021	100% small mammals	2.65E-03	1.05E-01	2.10E-03	2.85E-04	0.014	0.02
Endosulfan I											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0021	100 % foliage/seeds	2.75E-03	2.26E-02	2.10E-03	5.79E-04	10	0.0001
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0021	100% earthworms	2.75E-03	2.26E-02	2.10E-03	4.92E-03	10	0.0005
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0021	100% small mammals	2.75E-03	2.26E-02	2.10E-03	7.84E-05	10	0.000008
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0021	100 % foliage	2.75E-03	2.26E-02	2.10E-03	2.47E-04	0.25	0.001
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0021	100% earthworms	2.75E-03	2.26E-02	2.10E-03	4.74E-03	0.33	0.01
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0021	100% small mammals	2.75E-03	2.26E-02	2.10E-03	2.85E-04	0.12	0.002
Endosulfan II											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0045	100 % foliage/seeds	5.90E-03	4.85E-02	4.50E-03	1.24E-03	10	0.0001
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0045	100% earthworms	5.90E-03	4.85E-02	4.50E-03	1.05E-02	10	0.001
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0045	100% small mammals	5.90E-03	4.85E-02	4.50E-03	1.68E-04	10	0.00002
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0045	100 % foliage	5.90E-03	4.85E-02	4.50E-03	5.29E-04	0.25	0.002
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0045	100% earthworms	5.90E-03	4.85E-02	4.50E-03	1.02E-02	0.33	0.03
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0045	100% small mammals	5.90E-03	4.85E-02	4.50E-03	6.10E-04	0.12	0.005
Endrin											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0094	100 % foliage/seeds	5.03E-03	1.21E-01	9.40E-03	1.20E-03	0.01	0.1
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0094	100% earthworms	5.03E-03	1.21E-01	9.40E-03	2.61E-02	0.01	**3**
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0094	100% small mammals	5.03E-03	1.21E-01	9.40E-03	3.51E-04	0.01	0.04
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0094	100 % foliage	5.03E-03	1.21E-01	9.40E-03	4.66E-04	0.084	0.006
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0094	100% earthworms	5.03E-03	1.21E-01	9.40E-03	2.53E-02	0.109	0.2
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0094	100% small mammals	5.03E-03	1.21E-01	9.40E-03	1.27E-03	0.038	0.03
gamma-BHC											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0021	100 % foliage/seeds	3.89E-03	2.16E-02	2.10E-03	7.94E-04	2	0.0004
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0021	100% earthworms	3.89E-03	2.16E-02	2.10E-03	4.69E-03	2	0.002
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0021	100% small mammals	3.89E-03	2.16E-02	2.10E-03	7.84E-05	2	0.00004
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0021	100 % foliage	3.89E-03	2.16E-02	2.10E-03	3.46E-04	13.44	0.00003
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0021	100% earthworms	3.89E-03	2.16E-02	2.10E-03	4.52E-03	17.58	0.0003
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0021	100% small mammals	3.89E-03	2.16E-02	2.10E-03	2.85E-04	6.15	0.00005

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
Heptachlor											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.007	100 % foliage/seeds	1.22E-03	8.68E-03	7.00E-03	4.16E-04	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.007	100% earthworms	1.22E-03	8.68E-03	7.00E-03	2.10E-03	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.007	100% small mammals	1.22E-03	8.68E-03	7.00E-03	2.61E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.007	100 % foliage	1.22E-03	8.68E-03	7.00E-03	1.26E-04	0.218	0.001
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.007	100% earthworms	1.22E-03	8.68E-03	7.00E-03	1.86E-03	0.286	0.006
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.007	100% small mammals	1.22E-03	8.68E-03	7.00E-03	9.49E-04	0.1	0.009
Heptachlor Epoxide											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.0031	100 % foliage/seeds	1.75E-03	5.21E-03	3.10E-03	4.15E-04	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.0031	100% earthworms	1.75E-03	5.21E-03	3.10E-03	1.22E-03	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.0031	100% small mammals	1.75E-03	5.21E-03	3.10E-03	1.16E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.0031	100 % foliage	1.75E-03	5.21E-03	3.10E-03	1.62E-04	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.0031	100% earthworms	1.75E-03	5.21E-03	3.10E-03	1.11E-03	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.0031	100% small mammals	1.75E-03	5.21E-03	3.10E-03	4.20E-04	NSV	
p,p'-Methoxychlor											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.021	100 % foliage/seeds	1.10E-02	3.53E-02	2.10E-02	2.65E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.021	100% earthworms	1.10E-02	3.53E-02	2.10E-02	8.29E-03	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.021	100% small mammals	1.10E-02	3.53E-02	2.10E-02	7.84E-04	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.021	100 % foliage	1.10E-02	3.53E-02	2.10E-02	1.02E-03	6.7	0.0002
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.021	100% earthworms	1.10E-02	3.53E-02	2.10E-02	7.51E-03	8.8	0.0009
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.021	100% small mammals	1.10E-02	3.53E-02	2.10E-02	2.85E-03	3.1	0.0009
Toxaphene											
	Mourning dove (*Zenaida macrocura*)	0.19	0.139	0.23	100 % foliage/seeds	8.17E-02	3.40E-01	2.30E-01	2.16E-02	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.23	100% earthworms	8.17E-02	3.40E-01	2.30E-01	8.09E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.0353	0.057	0.23	100% small mammals	8.17E-02	3.40E-01	2.30E-01	8.58E-03	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.23	100 % foliage	8.17E-02	3.40E-01	2.30E-01	7.79E-03	13.4	0.001
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.23	100% earthworms	8.17E-02	3.40E-01	2.30E-01	7.26E-02	17.6	0.004
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.23	100% small mammals	8.17E-02	3.40E-01	2.30E-01	3.12E-02	6.2	0.005
Aroclor 1016											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	0.18	0.02
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	0.18	0.08
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	0.18	0.01
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	2.99	0.0004
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	3.91	0.003
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	1.37	0.004
Aroclor 1221											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	0.18	0.02
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	0.18	0.08
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	0.18	0.01
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	NSV	
Aroclor 1232											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	0.18	0.02
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	0.18	0.08
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	0.18	0.01
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	NSV	

Table 1.7
Exposure of Terrestrial Wildlife Receptors to Surface Soil, Initial Screening
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient
Aroclor 1242											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	0.41	0.009
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	0.41	0.03
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	0.41	0.004
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	0.151	0.008
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	0.197	0.06
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	0.069	0.08
Aroclor 1248											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.2	100 % foliage/seeds	6.58E-02	2.90E-01	2.00E-01	1.78E-02	0.18	0.1
	American woodcock (*Scolopax minor*)	0.214	0.164	0.2	100% earthworms	6.58E-02	2.90E-01	2.00E-01	6.91E-02	0.18	0.4
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.2	100% small mammals	6.58E-02	2.90E-01	2.00E-01	7.46E-03	0.18	0.04
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.2	100 % foliage	6.58E-02	2.90E-01	2.00E-01	6.32E-03	0.033	0.2
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.2	100% earthworms	6.58E-02	2.90E-01	2.00E-01	6.19E-02	0.043	1
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.2	100% small mammals	6.58E-02	2.90E-01	2.00E-01	2.71E-02	0.015	**2**
Aroclor 1254											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	0.18	0.02
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	0.18	0.08
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	0.18	0.008
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	0.051	0.02
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	0.067	0.2
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	0.14	0.04
Aroclor 1260											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	NSV	
Aroclor 1268											
	Mourning dove (*Zenaida macrocura*)	0.190	0.139	0.04	100 % foliage/seeds	1.32E-02	5.80E-02	4.00E-02	3.56E-03	NSV	
	American woodcock (*Scolopax minor*)	0.214	0.164	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.38E-02	NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.035	0.057	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	1.49E-03	NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.0875	0.032	0.04	100 % foliage	1.32E-02	5.80E-02	4.00E-02	1.26E-03	NSV	
	Short-tailed shrew (*Blarina brevicauda)*	0.209	0.03	0.04	100% earthworms	1.32E-02	5.80E-02	4.00E-02	1.24E-02	NSV	
	long-tailed weasel (*Mustella frenata*)	0.13	0.043	0.04	100% small mammals	1.32E-02	5.80E-02	4.00E-02	5.42E-03	NSV	

Notes:

Shaded cells indicate NOAEL-based EQ greater than 1.

Values given for long-tailed weasel are taken from values for the mink.

NOAEL values for PAHs obtained from Appendix 5-1 and Appendix 5-2 of Ecological Soil Screening Levels for Polycyclic Aromatic Hydrocarbons, Interim Final, OSWER Directive 9285.7-78, USEPA, 2007.

All other NOAELs obtained from Toxicological Benchmarks for Wildlife: 1996 Revision, B.E. Sample, D.>m Opresko, and G.W. Suter II, Oak Ridge National Laboratory ES/ER/TM-86/R3, 1996.

* NOAELs for BHC - mixed isomers

** Avian NOAELs for BHC-mixed isomers

***Avian toxicity increases with increasing Aroclor number (Polychlorinated Biphenyls and Terphenyls (2nd ed), Environmental Health Criteria #140, WHO, 1992). Accordingly, avian TRVs for Aroclor 1254 were used as proxy values for Aroclors 1016

Table 1.8
Exposure Parameters for Upper Trophic Level Ecological Receptors, Refined Assessment
Garvey Elevator Superfund Site
Hastings, Nebraska

Receptor	Feeding Guild	[a]Food Ingestion Rate		[b]Dietary Composition	Soil Ingestion Rate		Area Use Factor (AUF)		
		kg dw/kg bw/d	Reference		Fraction of Diet	Reference	Foraging Area (acres)	Reference	AUF[c]
Birds									
Mourning dove (*Zenaida macroura*)	Avian herbivore	0.137	EPA, 2007	100 % foliage/seeds	0.061	EPA, 2007	See note		1
American woodcock (*Scolopax minor*)	Avian insectivore	0.142	EPA, 2007	100% earthworms	0.064	EPA, 2007	80	Mean value, Greg, 1984, as cited in EPA 2003	1
Red-tailed hawk (*Buteo jamaicensis*)	Avian carnivore	0.026	EPA, 2007	100% small mammals	0.024	EPA, 2007	1722	Mean value, Craighead and Craighead, 1956, as cited in EPA 2003	0.062
Mammals									
meadow vole (*Microtus pennsylvanicus*)	Mammalian herbivore	0.076	EPA, 2007	100 % foliage	0.012	EPA, 2007	0.09	average of mean values from Madison, 1980, and Ostfield, et al, 1988, as cited in EPA 2003	1
Short-tailed shrew (*Blarina brevicauda*)	Mammalian insectivore	0.167	EPA, 2007	100% earthworms	0.009	EPA, 2007	0.96	mean value, Bickner, 1966, as cited in EPA 2003	1
long-tailed weasel (*Mustella frenata*)	Mammalian carnivore	0.0710	EPA, 2007	100% small mammals	0.013	EPA, 2007	128	mean range for adult females, Gehring and Swihart, 2004	0.83

a = arithmetic mean of mean food intake rate listed in Table 1, Attachment 4-1, EPA 2007.
b) It was assumed that each receptor would consume only the dietary item for which the species serves as the endpoint receptor (e.g., plants for herbivores; worms for insectivores; etc.).
c) Although operations encompassed 22 acres of the 106-acre facility, the entire facility acreage was conservatively used to calculate the AUF.
Note: reliable information on mourning dove foraging area not found. Per http://www.fs.fed.us/psw/rsl/projects/wild/verner/birds/b060.pdf, doves may feed as far as one mile from nest. Used AUF of 1 or conservatism.

EPA, 2007. Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs): Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs.
OSWER Directive 9285.7-55. Revised April 2007.
EPA, 2003. Wildlife Exposures Handbook, Volume 1. EPA/600/R-93/187, December 1993.
Gehring, T. M. and R. K. Swihart, 2004. Home Range and Movements of Long-Tailed Weasels ina Landscape Fragmented by Agriculture. J. Mammalogy, 85(1): 79-86.

Table 1.9
Exposure of Terrestrial Wildlife Receptors to Surface Soil, Refined Screening
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	AUF	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient	LOAEL (mg/kg-day)	LOAEL Hazard Quotient
Hexachlorobenzene														
	Mourning dove (*Zenaida macrocura*)	0.137	0.061	0.19	100 % foliage/seeds	1	4.67E-02	2.87E+00	1.90E-01	7.99E-03	NSV		NSV	
	American woodcock (*Scolopax minor*)	0.142	0.064	0.19	100% earthworms	1	4.67E-02	2.87E+00	1.90E-01	4.10E-01	NSV		NSV	
	Red-tailed hawk (*Buteo jamaicensis*)	0.026	0.024	0.19	100% small mammals	0.062	4.67E-02	2.87E+00	1.90E-01	3.14E-04	NSV		NSV	
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	4.67E-02	2.87E+00	1.90E-01	3.73E-03	NSV		NSV	
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	4.67E-02	2.87E+00	1.90E-01	4.80E-01	NSV		NSV	
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	4.67E-02	2.87E+00	1.90E-01	1.13E-02	NSV		NSV	
Benzo(a)anthracene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	2.48E-02	3.02E-01	0.00E+00	2.06E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	2.48E-02	3.02E-01	0.00E+00	5.07E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	2.48E-02	3.02E-01	0.00E+00	1.46E-04	NA--PAH Intakes Summed Below			
Benzo(a)pyrene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.23	100 % foliage	1	3.04E-02	3.06E-01	0.00E+00	2.52E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.23	100% earthworms	1	3.04E-02	3.06E-01	0.00E+00	5.14E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.23	100% small mammals	0.83	3.04E-02	3.06E-01	0.00E+00	1.76E-04	NA--PAH Intakes Summed Below			
Benzo(b)fluoranthene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.23	100 % foliage	1	7.13E-02	5.98E-01	0.00E+00	5.63E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.23	100% earthworms	1	7.13E-02	5.98E-01	0.00E+00	1.00E-01	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.23	100% small mammals	0.83	7.13E-02	5.98E-01	0.00E+00	1.76E-04	NA--PAH Intakes Summed Below			
Benzo(g,h,i)perylene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	5.53E-02	5.59E-01	0.00E+00	4.37E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	5.53E-02	5.59E-01	0.00E+00	9.36E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	5.53E-02	5.59E-01	0.00E+00	1.46E-04	NA--PAH Intakes Summed Below			
Benzo(k)fluoranthene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	2.77E-02	4.94E-01	0.00E+00	2.28E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	2.77E-02	4.94E-01	0.00E+00	8.28E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	2.77E-02	4.94E-01	0.00E+00	1.46E-04	NA--PAH Intakes Summed Below			
Chrysene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.23	100 % foliage	1	2.78E-02	5.27E-01	0.00E+00	2.33E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.23	100% earthworms	1	2.78E-02	5.27E-01	0.00E+00	8.83E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.23	100% small mammals	0.83	2.78E-02	5.27E-01	0.00E+00	1.76E-04	NA--PAH Intakes Summed Below			

Table 1.9
Exposure of Terrestrial Wildlife Receptors to Surface Soil, Refined Screening
Garvey Elevator Superfund Site
Hastings, Nebraska

Analyte	Receptor	Food Ingestion Rate (kg dw/kg bw/d) (dry)	Soil Ingestion Rate (kg soil/kg food)	Soil Exposure Point Concentration (mg/kg dry weight)	Dietary Composition	AUF	Plant Tissue Concentration (mg/kg dry weight)	Worm Tissue Concentration (mg/kg dry weight)	Mammal Tissue Concentration (mg/kg dry weight)	Average Daily Dose (mg/kg bw-day)	NOAEL (mg/kg bw-day)	NOAEL Hazard Quotient	LOAEL (mg/kg-day)	LOAEL Hazard Quotient
Dibenz(a,h)anthracene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	2.47E-02	4.39E-01	0.00E+00	2.05E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	2.47E-02	4.39E-01	0.00E+00	7.36E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	2.47E-02	4.39E-01	0.00E+00	1.46E-04	NA--PAH Intakes Summed Below			
Indeno(1,2,3-c,d)pyrene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	2.09E-02	5.43E-01	0.00E+00	1.76E-03	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	2.09E-02	5.43E-01	0.00E+00	9.10E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	2.09E-02	5.43E-01	0.00E+00	1.46E-04	NA--PAH Intakes Summed Below			
Pyrene														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.19	100 % foliage	1	1.37E-01	3.33E-01	0.00E+00	1.06E-02	NA--PAH Intakes Summed Below			
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.19	100% earthworms	1	1.37E-01	3.33E-01	0.00E+00	5.58E-02	NA--PAH Intakes Summed Below			
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.19	100% small mammals	0.83	1.37E-01	3.33E-01	0.00E+00	1.46E-04	NA--PAH Intakes Summed Below			
Total HMW PAHs														
	meadow vole (*Microtus pennsylvanicus*)									3.36E-02	0.615	0.05	31.6	0.001
	Short-tailed shrew (*Blarina brevicauda*)									6.87E-01	0.615	1	31.6	0.02
	long-tailed weasel (*Mustella frenata*)									1.40E-03	0.615	0.002	31.6	0.00004
Dieldrin														
	meadow vole (*Microtus pennsylvanicus*)	0.076	0.012	0.013	100 % foliage	1	5.33E-03	1.91E-01	2.29E-01	4.17E-04	0.015	0.03	1.7	0.0002
	Short-tailed shrew (*Blarina brevicauda*)	0.167	0.009	0.013	100% earthworms	1	5.33E-03	1.91E-01	2.29E-01	3.19E-02	0.015	**2**	1.7	0.02
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.013	100% small mammals	0.83	5.33E-03	1.91E-01	2.29E-01	1.35E-02	0.015	0.9	1.7	0.01
Endrin														
	American woodcock (*Scolopax minor*)	0.142	0.064	0.0047	100% earthworms	1	2.51E-03	6.03E-02	4.70E-03	8.61E-03	0.01	0.9	0.1	0.09
Aroclor 1248														
	long-tailed weasel (*Mustella frenata*)	0.071	0.013	0.2	100% small mammals	0.83	6.58E-02	2.90E-01	2.00E-01	1.44E-02	0.015	1	0.15	0.1

Notes:

Shaded cells indicate NOAEL-based EQ greater than 1.

Values given for long-tailed weasel are taken from values for the mink.

LOAELs for high molecular weight PAHs and dieldrin obtained from Eco-SSL documents as described in the text.

All other LOAELs obtained from Toxicological Benchmarks for Wildlife: 1996 Revision, B.E. Sample, D.M. Opresko, and G.W. Suter II, Oak Ridge National Laboratory ES/ER/TM-86/R3, 1996.

FIGURE(S)

Filename: X:/EPA009/Garvey/SLERA/
Site_Loc_Map.mxd
Project: EP9033.01.48.01
Revised: 04/06/11 ST
Source: ESRI StreetMap USA
Nebraska DNR

HGL
HydroGeoLogic, Inc

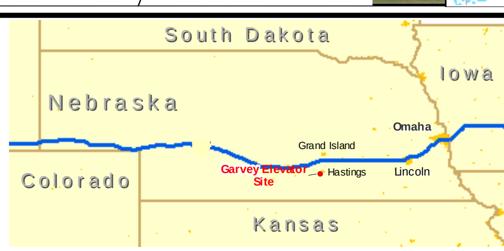
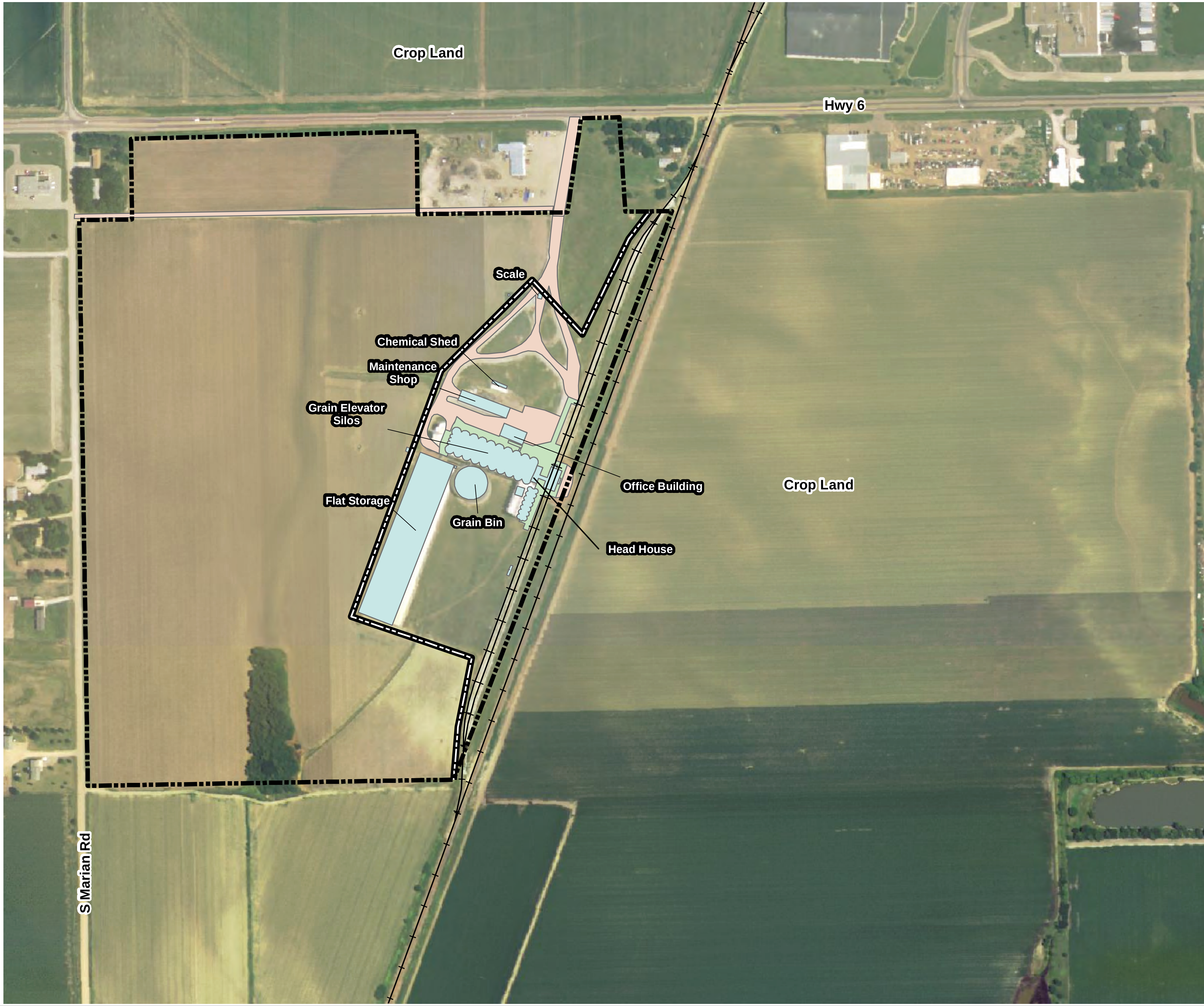


Figure 1.1
Site Location Map
Garvey Elevators Site
Hastings, NE



HGL—Screening Level Ecological Risk Assessment, Garvey Elevator Superfund Site—Hastings, NE

Figure 1.2
Current Site Map

Legend

- Garvey Property Boundary
- Concrete Paved Area
- Buildings
- Gravel Road
- Railroad
- OU1 Boundary

0 200 400 800
Feet

N

Filename: X:/EPA009/Garvey/SLERA/SiteMap.mxd
Project: EP9033.01.48.01
Revised: 04/05/10 RL
Source: ENSR GDB 2008, DNR

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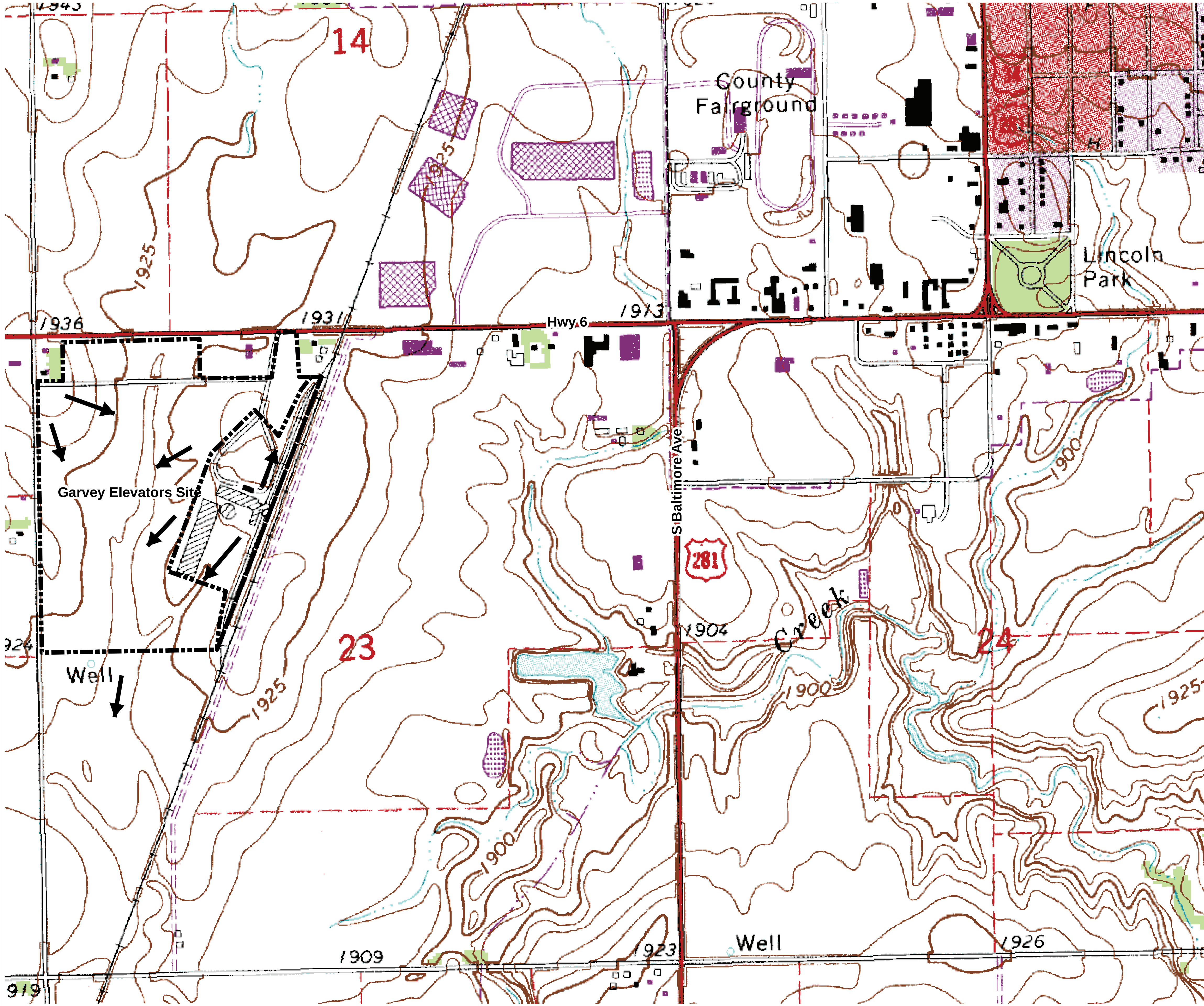
Figure 1.3
Garvey Elevators Site
Topography/Hydrology



Legend

Site Boundary

Surface Water Flow

0 450 900 1,800
Feet

N

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Revised: 04/05/11 RL
Source: USGS, 1983

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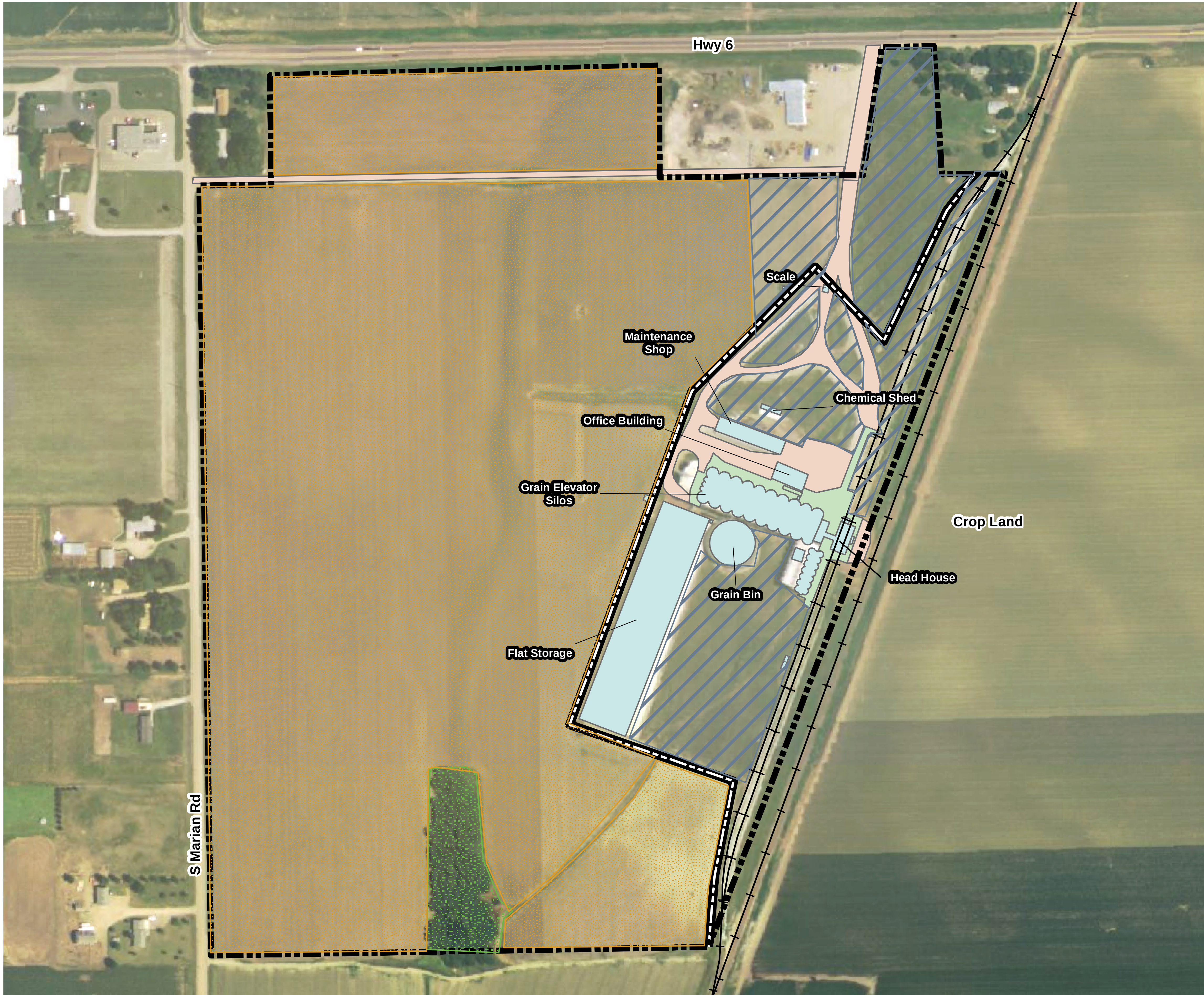
Figure 1.4
Habitat Map



Legend

- Garvey Property Boundary
- Concrete Paved Area
- Buildings
- Gravel Road
- Cropland
- Cottonwood Stand
- Maintained Grass
- Railroad
- OU1 Boundary

0 145 290 580
Feet

N

Filename: X:/EPA009/Garvey/SLERA/HabitatMap.mxd
Project: EP9033.01.48.01
Revised: 04/05/11 RL
Source: ENSR GDB 2008, DNR

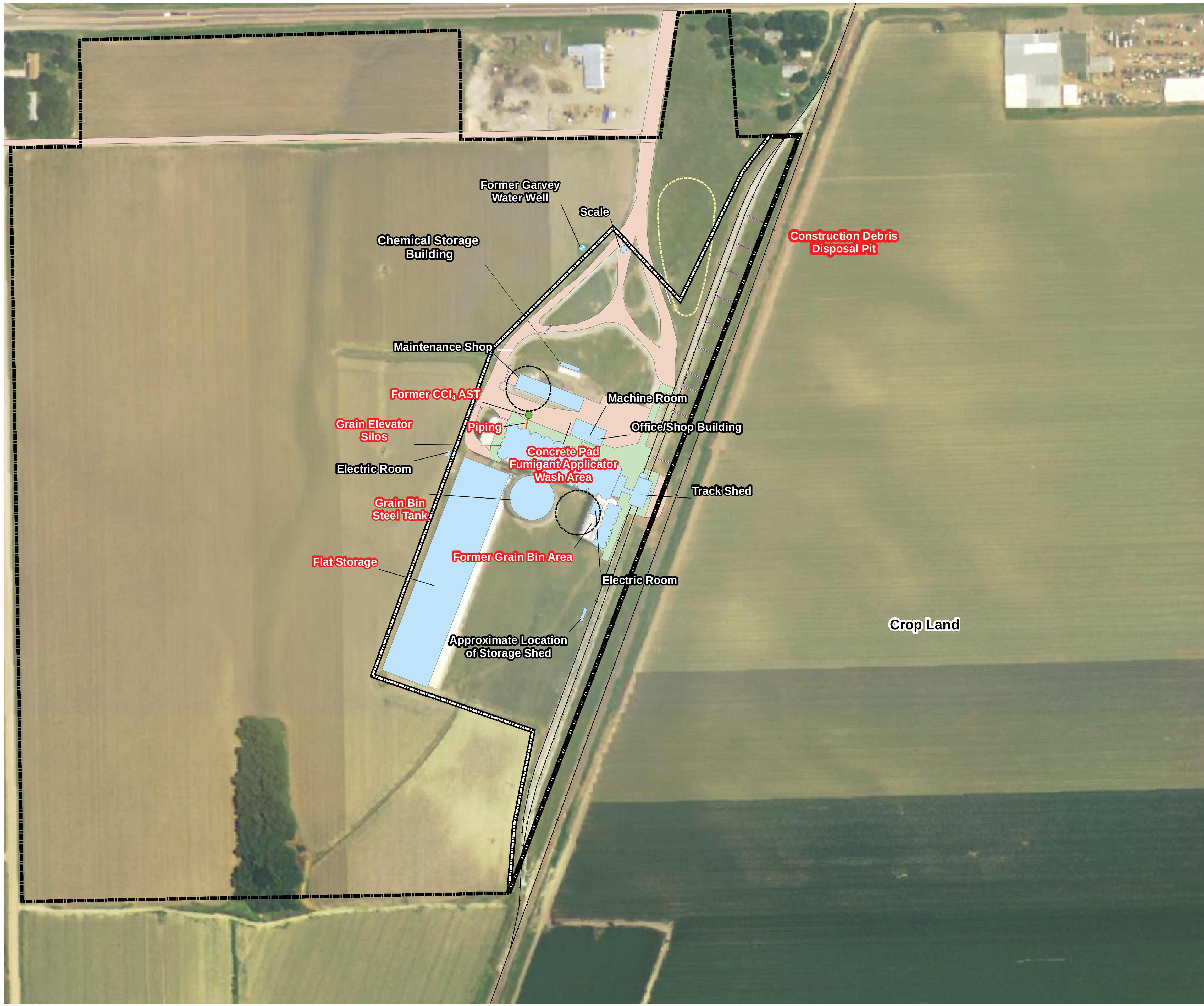
United States Environmental Protection Agency

HGL HydroGeoLogic, Inc

CDM

HGL—Screening Level Ecological Risk Assessment, Garvey Elevator Superfund Site—Hastings, NE

Figure 1.5
Known and Potential Source Areas



Legend

- Garvey Property Boundary
- OU1 Boundary
- Culverts
- Buildings
- Former Steel Grain Bin
- Concrete Paved Area
- Gravel Road
- Railroad
- Former Garvey Water Well

Potential Source Areas

- CCl_4 AST = Carbon Tetrachloride Above Ground Storage Tank
- Buried Piping

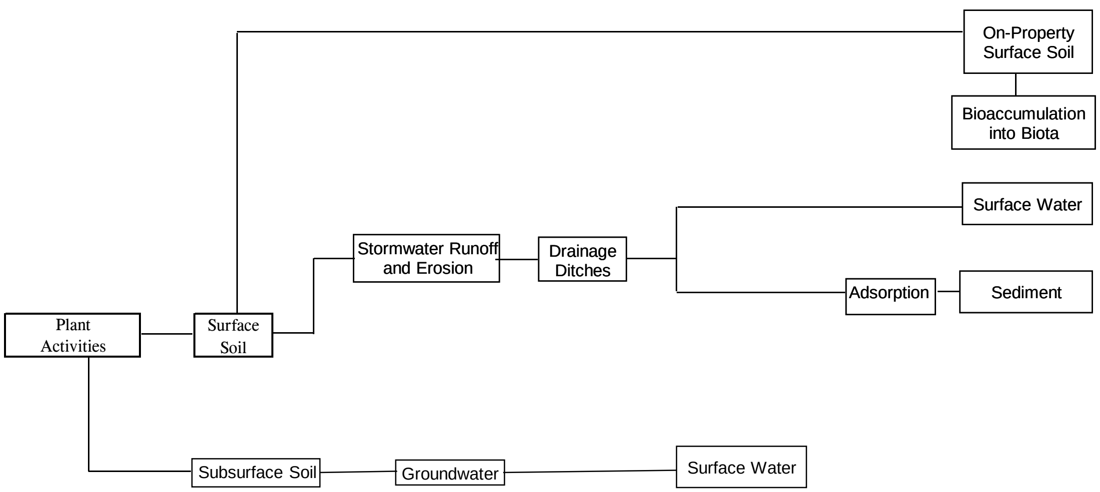
0 150 300
Feet

N

Filename: X:/EPA009/Garvey/SLERA/ SourceArea.mxd
Project: EP9033.01.46.11
Revised: 04/06/11 RL
Source: ENSR GDB 2008; DNR; Garvey, 2003

HGL HydroGeoLogic, Inc

Figure 1.6
Conceptual Site Model - Ecological Risk Assessment
Garvey Elevator Superfund Site
Hastings, NE



Potential Receptor

Exposure Medium	Terrestrial Plants	Terrestrial Invertebrates	Aquatic Plants	Benthic Invertebrates	Avian Herbivore	Avian Insectivore	Avian Carnivore	Mammalian Herbivore	Mammalian Insectivore	Mammalian Carnivore	Remark
On-Property Surface Soil	X	X			X	X	X	X	X	X	
Bioaccumulation into Biota		X			X	X	X	X	X	X	
Surface Water											Pathway complete but insignificant due to limited occurrence.
Sediment	X	X			X	X	X	X	X	X	Pathway complete but incomplete to benthic receptors due to lack of aquatic habitat. Considered complete for terrestrial receptors.
Surface Water											Pathway incomplete due to depth to groundwater being greater than 100 ft bgs.

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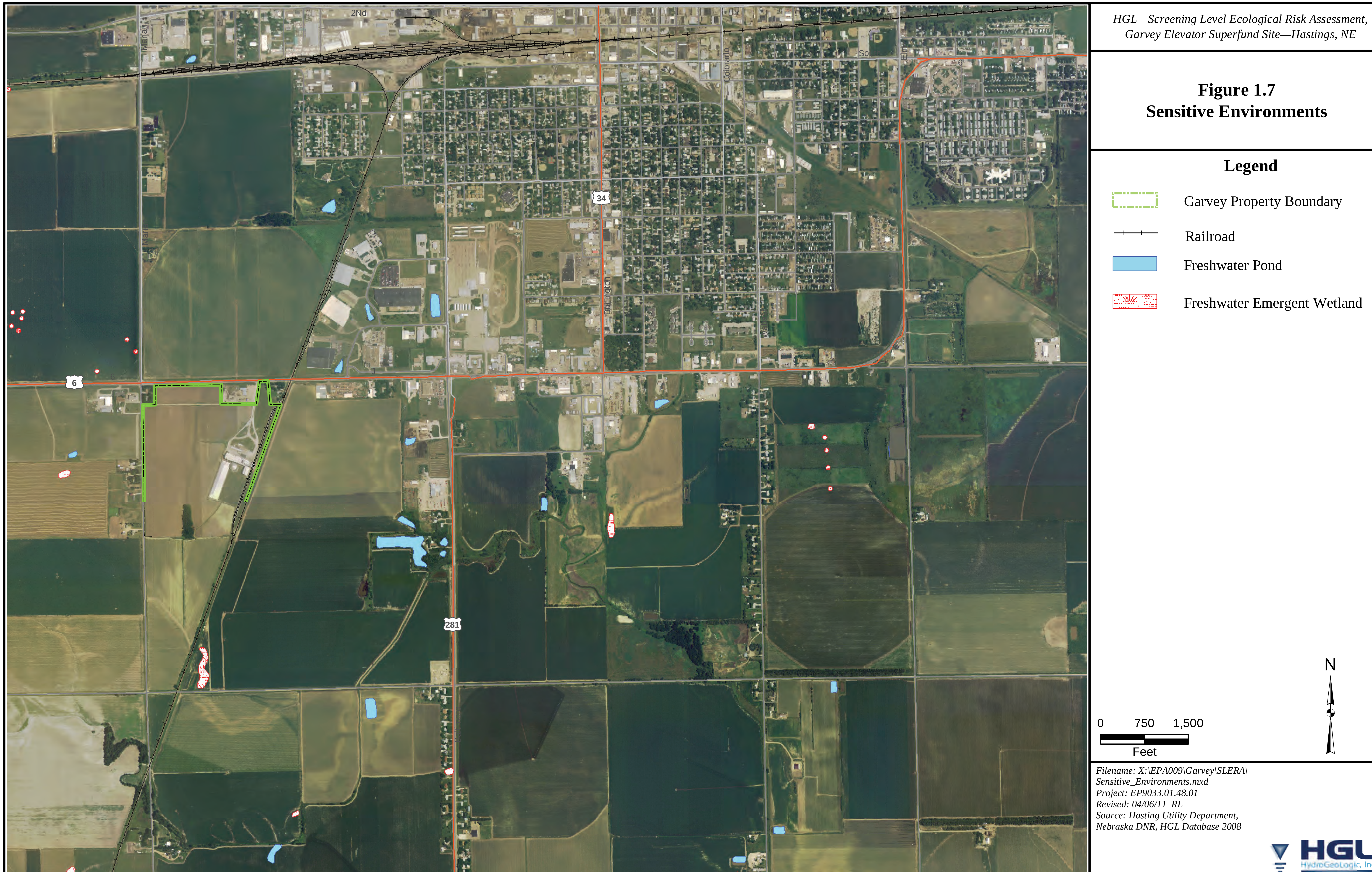
HGL—Screening Level Ecological Risk Assessment, Garvey Elevator Superfund Site—Hastings, NE

Figure 1.7
Sensitive Environments



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Revised: 04/06/11 RL
Source: Hasting Utility Department, Nebraska DNR, HGL Database 2008

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Figure 1.8
Sediment and Surface Soil Sample Locations

Legend

Garvey Property Boundary

Sediment Sample Location (considered Surface Soil)

Soil Boring Location (RI DPT sample)

OU1 Boundary

** Detection within 10' Below Ground Surface*

0 130 260 520
Feet

N

Filename: X:/EPA009/Garvey/GIS/MXDs/HHRA Source_Area_Soil_Sample_Locations.mxd
Project: EP9033.01.48.01
Revised: 04/06/11 RL
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

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ATTACHMENT 1

COMPLETED ECOLOGICAL CHECKLIST

CHECKLIST FOR
ECOLOGICAL ASSESSMENT
GARVEY ELEVATOR SITE, HASTINGS, NEBRASKA

Introduction

The checklist that follows provides guidance in making observations for an ecological assessment for the Garvey Elevator Site located in Adams County, Hastings, Nebraska **(Figure 1)**. The site is the location of a grain storage facility previously owned by Garvey Elevators, Inc. The site property is currently occupied by AGP Grain Marketing, LLC (AGP). This checklist is based on an ecological reconnaissance conducted August 24-25, 2009.

The "site", as depicted on **Figure 2**, includes the grain storage operation facilities and the agricultural fields to the west owned by the facility. The site boundary is shown on Figures 1 and 2 and totals approximately 106 acres. The site is bounded to the north by Highway 6, to the east by railroad tracks, to the south by agricultural fields, and to the west by S. Marian Road. The site includes a series of ditches that drain the agricultural land and the facility. The drainage patterns can be seen on **Figure 4.**

The checklist is a screening tool for preliminary site evaluation and may also be useful for planning more extensive site investigations. The results of the checklist will provide important information for a screening level ecological risk assessment (ERA) that is planned to be prepared using previous and newly collected data for the Garvey Elevator Site. The screening level ERA will be performed in accordance with USEPA's Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA, 1997). The ERA will consist of Steps 1, 2, and 3a of the ERA process. Step 1 will include problem formulation, Step 2 will be an initial screening, and Step 3a will be a modified screening.

This Ecological Checklist includes the checklist itself, Figures 1 through 4, **Table 1** (observed wildlife species and their associated Latin species names), and **Attachment 1** (photo log).

Ecological Checklist

The checklist has been divided into sections that correspond to data collection methods and ecosystem types. These sections are:

I. Site Description
  A. Summary of Observations and Site Setting
II. Terrestrial Habitat Checklist
  A. Wooded
  B. Shrub/Scrub
  C. Open Field
  D. Miscellaneous
III. Aquatic Habitat Checklist – Non-Flowing Systems
IV. Aquatic Habitat Checklist – Flowing Systems
V. Wetlands Habitat Checklist

CHECKLIST FOR ECOLOGICAL ASSESSMENT

I. SITE DESCRIPTION

1. Site Name: <u>Garvey Elevator Site</u>

Location: 2315 West Highway 6 (south of Hwy 6/34, west of Burlington Northern and Sante Fe railroad (RR), east of S. Marian Road, and north of Walter Family Trust).

County: **Adams** City: **Hastings** State: **Nebraska**

2. Latitude: 40.590 Longitude: -98.384

3. What is the approximate area of the site? **A total of approximately 106 acres, see Figure 2.**

4. Is this the first site visit? ☒ yes ☐ no If no, attach trip report of previous site visit(s), if available.

   Date(s) of previous site visit(s): **N/A**

5. Please attach to the checklist USGS topographic map(s) of the site, if available.

   USGS Map is attached as Figure 3

6. Are aerial or other site photographs available? ☒ yes ☐ no If yes, please attach any available photo(s) to the site map at the conclusion of this section. **See Attachment 1.**

7. The land use on the site is:

   0% Urban
   0% Rural
   0% Residential
   0% Industrial (☐ light ☒ heavy)
   100% Agricultural
   0% Recreational
   0% Undisturbed
   0% Other (Landfill)

   The area surrounding the site is:
   1 mile radius (see **Figure 1)**

   0% Urban
   0% Rural
   10% Residential
   10% Industrial (☒light ☐ heavy)
   80% Agricultural
   0% Recreational
   0% Undisturbed
   0% Other

8. Has any movement of soil taken place at the site? ☒ yes ☐ no If yes, please identify the most likely cause of this disturbance:

☒ Agricultural Use	☒ Heavy Equipment	☐ Mining
☒ Natural Events	☒ Erosion	☐ Other **(past activity)**

Please describe:

There are two major activities that impact movement of soil at the site. A good portion of the site is in active agricultural use. In addition, there is a constant movement of trucks in and out of the grain elevator facility.

9. Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site, e.g., federal and state parks, national and state monuments, wetlands, prairie potholes? *Remember, flood plains and wetlands are not always obvious; do not answer no without confirming information*.

☐ yes ☒ no

The Highway 6 project (less than 1 mile to the east) in Hastings, Nebraska has received information from the Nebraska Department of Natural Resources and the U.S. Fish and Wildlife Service that indicates no threatened or endangered species are expected to use the site. Two Nebraska State Species of Special Concern (field sparrow and redheaded woodpecker) were observed during the ecological site visit (see Table 1).

Please provide the source(s) of information used to identify these sensitive areas, and indicate their general location on the site map.

Field sparrows and redheaded woodpeckers were observed on the Garvey Elevator Site during the ecological site visit. The areas of observation are along the southern property line as shown on Figures 1, 2, and 4.

10. What type of facility is located at the site?

☐ Chemical ☐ Manufacturing ☐ Mixing ☐ Waste Disposal
☒ Other (specify) **Agriculture**

11. What are the suspected contaminants of concern at the site? If known, what are the maximum concentration levels?

Carbon Tetrachloride in the groundwater at over 100 feet below ground surface: The highest carbon tetrachloride concentration in groundwater in 2009 (so far) is 1,600 J µg/L. The previous maximum concentration of 29,943 µg/L in groundwater was found in 1994. No perennial SW bodies on site therefore no surface water samples have been collected from any pooled water after storms (either current or historical).

12. Check any potential routes of off-site migration of contaminants observed at the site:

    ☒ Swales ☐ Depressions ☒ Drainage Ditches
    ☒ Runoff ☒ Windblown Particulates ☒ Vehicular Traffic
    ☐ Other (specify)

13. If known, what is the approximate depth to the water table? **At least 100 feet below ground surface.**

14. Is the direction of surface runoff apparent from site observations? ☒ yes ☐ no If yes, to which of the following does the surface runoff discharge? Indicate all that apply.

    ☒ Surface Water ☐ Groundwater ☐ Sewer ☒ Collection impoundment

15. Is there a navigable waterbody or tributary to a navigable waterbody? ☐ **yes** ☒ no

    N/A

16. Is there a water body anywhere on or in the vicinity of the site? If yes, also complete Section III: Aquatic Habitat Checklist Non-Flowing Systems and/or Section IV: Aquatic Habitat Checklist Flowing Systems. **A small area exists where temporary ponding of water occurs during the wet portions of the year or during periods of significant rain.**

    ☒ yes (approx. distance) ☐ no [Temporary ponding in the south central portion of the site]

17. Is there evidence of flooding? ☐ yes ☒ no *Wetlands and flood plains are not always obvious; do not answer no without confirming information*. If yes, complete Section V: Wetland Habitat Checklist.

18. If a field guide was used to aid any of the identifications, please provide a reference. Also, estimate the time spent identifying fauna. [Use a blank sheet if additional space is needed for text.] **Fauna was identified during the reconnaissance visit, which lasted approximately 8 hours.**

    References:

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Robbins, C., B. Brunn, and H. Zim, revised by J. Latimer, K. Nolting, and J. Coe. 2001. Birds of North America, a guide to identification. St. Martin's Press, NY, NY. 360 p.

Peterson, R. T., and V. M. Peterson. 2002. Birds of Eastern and Central North America, fifth edition. Houghton Mifflin Company, NY, NY. 427 p.

Behler, J. L., and F. W. King. 1979. National Audubon Society Field Guide to Reptiles and Amphibians, North America. Alfred A. Knopf, NY, NY. 743 p.

19. Are any threatened and/or endangered species (plant or animal) known to inhabit the area of the site?
☐ yes ☒ no *If yes, you are required to verify this information with the U.S. Fish and Wildlife Service*. If species identities are known, please list them next.

N/A

20. Record weather conditions at the time this checklist was prepared:

Dates: **8-24-09 & 8-25-09**

90-95 F Temperature (°C/°F)
10-15 mph Wind
No Clouds Cloud Cover
85 F Normal Daily High Temperature
No Precipitation (Rain, Snow)

IA. SUMMARY OF OBSERVATIONS AND SITE SETTING

The site setting is described above in the introduction.

Grain Elevator Facility: This area is approximately 22 acres and consists of a number of structures (Scale, Chemical Shed, Maintenance Shop, Office Building, Grain Elevator Silos, Flat Storage, Head House, and Grain Bin) as well as gravel and dirt roads and access to railroad tracks (**see Figure 2 and photos 5, 11, 21-24 in Attachment 1**). During a typical work day, there is consistent tractor trailer activity in and out of the facility.

Agricultural Areas: The agricultural areas of the site occupy approximately 84 acres of land (**see Figures 1, 2, and 4**) that, during the site visit, were planted in milo and soy bean crops (**see photos 3-5, 12, and 17 in Attachment 1**). The crops appeared to be growing even within the drainages of the site (**see photos 7, 11, and 15 in Attachment 1**). The fields were planted in crop land at the time of the site visit. It seems that after these crops have been harvested, cleared field habitats would then be present on the majority of the property for a good portion of the year. This field habitat, until planted with the next season's crop, would be attractive and used by predator species such as red-tailed (*Buteo jamaicensis*) and Swainson's (*Buteo swainsoni*) hawks and coyotes (*Canis latrans*).

Drainage ditches: There are a series of drainage ditches that drain the facility and the agricultural fields (**see Figure 4**). These ditches are in slight depressions. In some of these depressions it was apparent that standing water has occurred in the past (**see photos 5 and 6 in Attachment 1**).

Wooded area: There is a small (approximately 3 acre) wooded area in the south central portion of the site (**see Figures 1, 2, and 4**). This wooded area is dominated by cottonwood (*Populus deltoides*) and mulberry (*Morus rubra*) trees with various grasses, weeds, vines, shrubs, and small trees mixed in. Most of the bird activity observed was near the southern tip of the wooded area (**see photos 8, 9, 10, and 16 in Attachment 1**).

<u>**Surrounding area**</u>: The area immediately surrounding the Garvey Elevator site is made up of agricultural areas, a few residential houses, small businesses, dirt roads, and railroad tracks (**see Figure 1 and photo 7 in Attachment 1**).

<u>**Wildlife Observed:**</u> Wildlife observed during the site visit are listed in **Table 1**. Some of the observations of birds were of species using the crop areas such as blue grosbeak, mourning dove, and swallows. Many of the birds identified were in the wooded area or along the dirt road that leads to the wooded area (i.e., the dirt road that forms the southern boundary of the property as seen in **Figure 4**). Birds seen in this area of the woods and along the dirt road that leads to the wooded area include brown thrasher, chipping sparrow, gray catbird, northern oriole, redheaded woodpecker, and western kingbird. Flocks of rock pigeons were observed in the area of the grain elevator, the grain bin, and the flat storage building (**see Figure 2 and photos 18, 19, 20, and 21 of Attachment 1**).

Signs of a number of mammals were seen on the site and in the vicinity of the site. Species of mammals seen or signs of mammals seen include domestic dog, domestic cat, northern raccoon, red fox, striped skunk, and white-tailed deer. All species observed during the site visit are listed on **Table 1**.

Completed By: **Murray Wade** Affiliation: **CDM**
Site Manager: **Alan Rittgers, HGL**
Date: **October 22, 2009**

II. TERRESTRIAL HABITAT CHECKLIST

IIA. WOODED

1. Are there any wooded areas at the site? ☒ yes ☐ no If no, go to Section IIB: Shrub/Scrub.

2. What percentage or area of the site is wooded? **(3%; 3 acres)** Indicate the wooded area on the site map that is attached to a copy of this checklist. Please identify what information was used to determine the wooded area of the site.

   Figure 2 shows the wooded area in the south central portion of the site. Also see photos 8, 9, 10, and 16 of Attachment 1.

3. What is the dominant type of vegetation in the wooded area?
   (Check one: ☐ Evergreen ☒ Deciduous ☐ Mixed) Provide a photograph, if available.

   Dominant plant, if known: **Cottonwood is the dominant large tree of the wooded area. Mulberry trees dominate the outer edges of the wooded area along with various grasses, shrubs, weeds, and small trees.**

4. What is the predominant size of the trees at the site? Use diameter at breast height.

   ☐ 0-6 in. ☐ 6-12 in. ☒ > 12 in.

5. Specify type of understory present, if known. Provide a photograph, if available.

   The understory is deciduous and can be seen in photos 9 and 10 in Attachment 1.

IIB. SHRUB/SCRUB

1. Is shrub/scrub vegetation present at the site? ☐ yes ☒ no If no, go to Section IIC: Open Field.
2. What percentage of the site is covered by scrub/shrub vegetation? (**N/A**). Indicate the areas of shrub/scrub on the site map. Please identify what information was used to determine this area. **N/A**
3. What is the dominant type of shrub/scrub vegetation, if known? Provide a photograph, if available. **N/A**
4. What is the approximate average height of the shrub/scrub vegetation?
   ☐ 0-2 ft ☐ 2-5 ft ☐ > 5 ft
5. Based on site observations, how dense is the shrub/scrub vegetation?

   ☐ Dense ☐ Patchy ☐ Sparse

IIC. OPEN FIELD

1. Are there open field areas present at the site? ☒ yes ☐ no If yes, please indicate the type below:

   ☐ Prairie/Plains ☐ Savannah ☒ Old Field
   ☒ Other (specify) **agriculture**

2. What percentage of the site is open field? (**80%; about 84 acres**). Indicate the open field on the site map.

   The area of open field is in agricultural production (see Figure 1 and photos 1-7, 15, and 24 of Attachment 1).

3. What is/are the dominant plant(s)? Provide a photograph, if available.

   Milo and soy beans (see photos 1-7, 15, and 24 of Attachment 1).

4. What is the approximate average height of the dominant plant? **24-36 inches**

5. Describe the vegetation cover: ☒ Dense ☐ Sparse ☐ Patchy

IID. MISCELLANEOUS

1. Are other types of terrestrial habitats present at the site, other than woods, shrub/scrub, and open field?

   ☐ yes ☒ no If yes, identify and describe them below.

   N/A

2. Describe the terrestrial miscellaneous habitat(s) and identify these area(s) on the site map.

   N/A

3. What observations, if any, were made at the site regarding the presence and/or absence of major vegetation types, invertebrates, fish, amphibians, reptiles, birds, and mammals?

   To the south central of the property is a wooded area that ponds water during the wet times of the year (see Figure 4). The drainage ditches that lead to this area also include signs of standing water during wet times (see photo 6 of Attachment 1).

4. Review the questions in Section I to determine if any additional habitat checklists should be completed for this site.

III. AQUATIC HABITAT CHECKLIST NON-FLOWING SYSTEMS

Note: *Aquatic systems are often associated with wetland habitats. Please refer to Section V, Wetland Habitat Checklist.*

1. What type of open-water, non-flowing system is present at the site?

   ☐ Natural (pond, lake)
   ☐ Artificially Created (lagoon, reservoir, canal, impoundment)

2. If known, what is the name(s) of the water body(ies) on or adjacent to the site?

   There is a small area, shown as a blue dot on Figure 4, where standing water occurs during the wet times of year.

3. If a water body is present, what are its known uses (e.g., recreation, navigation, etc.)?

   N/A

4. What is the approximate size of the water body(ies)? **Not present during site visit.**

5. Is any aquatic vegetation present? ☐ yes ☒ no If yes, please identify the type of vegetation present if known.

   ☐ Emergent ☐ Submergent ☐ Floating

6. If known, what is the depth of the water? **N/A**

7. What is the general composition of the substrate? Check all that apply.

   ☐ Bedrock
   ☐ Boulder (> 10 in.)
   ☐ Cobble (2.5 10 in.)
   ☐ Gravel (0.1 2.5 in.)
   ☐ Other (specify)
   ☐ Sand (coarse)
   ☐ Silt (fine)
   ☐ Marl (shells)
   ☐ Clay (slick)
   ☐ Muck (fine/black)
   ☐ Debris
   ☐ Detritus
   ☐ Concrete

8. What is the source of water in the waterbody?

   ☐ River/Stream/Creek ☐ Groundwater ☐ Other (specify)
   ☐ Industrial Discharge ☒ Surface Runoff

9. Is there a discharge from the site to the waterbody? ☒ yes ☐ no If yes, please describe this discharge and its path. **The discharge only occurs during wet periods via drainage ditches.**

10. Is there a discharge from the waterbody? ☐ yes ☒ no If yes, and the information is available, identify from the list below the environment into which the waterbody discharges.

    ☐ River/Stream/Creek ☐ Onsite ☐ Offsite Distance

    ☐ Groundwater ☐ Onsite ☐ Offsite
    ☐ Wetland ☐ Onsite ☐ Offsite Distance
    ☐ Impoundment ☐ Onsite ☐ Offsite

11. Identify any field measurements and observations of water quality that were made. For those parameters for which data were collected provide the measurements and the units of measure below:

    No water present; therefore, field parameters of surface water could not be collected.

12. Describe observed color and area of coloration (surface water). **N/A**

13. Mark the open-water, non-flowing system on the site map attached to this checklist. **N/A**

14. What observations, if any, were made at the waterbody regarding the presence and/or absence of benthic macroinvertebrates, fish, birds, mammals, etc.? **N/A**

IV. AQUATIC HABITAT CHECKLIST - FLOWING SYSTEMS

Note: *Aquatic systems are often associated with wetland habitats. Please refer to Section V, Wetland Habitat Checklist.*

1. What type(s) of flowing water system(s) is (are) present at the site?

☐ River	☐ Stream	☐ Creek
☐ Dry wash	☐ Arroyo	☐ Brook
☒ Artificially Created (ditch, etc.)	☐ Intermittent Stream	☐ Channeling
	☐ Other (specify)	

2. If known, what is the name of the water body? **The intermittent drainage ditches drain the agricultural areas as denoted on Figure 4 and photos 7, 11, and 15 of Attachment A.**

3. For natural systems, are there any indicators of physical alteration (e.g., channeling, debris, etc.)?

   ☐ yes ☐ no If yes, please describe indicators that were observed.

   N/A

4. What is the general composition of the substrate? Check all that apply.

☐ Bedrock	☐ Sand (coarse)	☐ Muck (fine/black)
☐ Boulder (> 10 in.)	☒ Silt (fine)	☒ Debris
☐ Cobble (2.5 10 in.)	☐ Marl (shells)	☐ Detritus
☐ Gravel (0.1 2.5 in.)	☐ Clay (slick)	☐ Concrete
☐ Other (specify)		

5. What is the condition of the bank (e.g., height, slope, extent of vegetative cover)? **Much of the intermittent drainage ditches are vegetated in agricultural crops (see photos 7, 11, and 15 of Attachment 1).**

6. Is the system influenced by tides? ☐ yes ☒ no What information was used to make this determination? **Knowledge of the site.**

7. Is the flow intermittent? ☒ yes ☐ no If yes, please note the information that was used in making this determination. **The ditches are designed to provide a drainageway for runoff from the field during rain events (see Figure 4). There was no water present during the site visit.**

8. Is there a discharge from the site to the water body? ☒ yes ☐ no If yes, please describe the discharge and its path. **Only during wet portions of the year.**

9. Is there a discharge from the water body? ☐ yes ☒ no If yes, and the information is available, please identify what the water body discharges to and whether the discharge is onsite or offsite.

10. Identify any field measurements and observations of water quality that were made. For those parameters for which data were collected, provide the measurement and the units of measure in the appropriate space below:

    No water present; therefore, field parameters of surface water could not be collected.

11. Describe observed color and area of coloration of the surface water.

    Ditches were dry at the time of the Ecological Site Visit.

12. Is any aquatic vegetation present? ☐ yes ☒ no If yes, please identify the type of vegetation present, if known.

    ☐ Emergent ☐ Submergent ☐ Floating

13. Mark the flowing water system on the attached site map.

    The intermittent flow directions of the intermittent drainageways (i.e., ditches) can be seen on Figure 4.

14. What observations were made at the waterbody regarding the presence and/or absence of benthic macroinvertebrates, fish, birds, mammals, etc.?

    The area that ponds water during the wet times of year included many grasshoppers, deer tracks, signs of deer bedding areas, and many songbirds (see Table 1).

V. WETLAND HABITAT CHECKLIST

1. Based on observations and/or available information, are designated or known (circle one) wetlands definitely present at the site?

   ☐ yes ☒ no

   Please note the sources of observations and information used (e.g., USGS topographic maps, national wetland inventory, federal or state agency, etc.) to make this determination.

   The USGS map does not indicate wetlands on or in the vicinity of the site (see Figure 3). No wetlands were observed during the Ecological Site Visit.

2. Based on the location of the site (e.g., along a waterbody, in a floodplain) and site conditions (e.g., standing water; dark, wet soils; mud cracks; debris line; water marks), are wetland habitats suspected?

   ☐ yes ☒ no If yes, proceed with the remainder of the wetland habitat identification checklist.

3. What type(s) of vegetation are present in the wetland? **N/A**

   ☐ Submergent ☐ Emergent
   ☐ Shrub/Scrub ☐ Wooded
   ☐ Other (specify)

4. Provide a general description of the vegetation present in and around the wetland (height, color, etc.). Provide a photograph of the known or suspected wetlands, if available.

   N/A

5. Is standing water present? ☐ yes ☒ no If yes, is this water: ☐ Fresh ☐ Brackish

   What is the approximate area of the water (sq. ft.)? **N/A**
   Please complete questions 4, 11, 12 in Checklist III, Aquatic Habitat Non-Flowing Systems.

6. Is there evidence of flooding at the site? ☒ yes ☐ no What observations were noted?

   ☐ Buttressing ☐ Water Marks ☐ Mud Cracks
   ☒ Debris Line ☐ Other (describe below)

7. If known, what is the source of the water in the wetland? **N/A**

   ☐ Stream/River/Creek/Lake/Pond ☐ Groundwater
   ☐ Flooding ☐ Surface Runoff

8. Is there a discharge from the site to a known or suspected wetland? ☐ yes ☐ no If yes, please describe. **N/A**

9. Is there a discharge from the wetland? ☐ yes ☐ no If yes, to what waterbody is discharge released? **N/A**

   ☐ Surface stream/River ☐ Groundwater ☐ Lake/Pond ☐ Marine

10. If a soil sample was collected, describe the appearance of the soil in the wetland area. Check or type in the best response.

    Color (☐ blue/gray, ☐ brown, ☐ black, ☐ mottled) **N/A**

    Water content (☐ dry, ☐ wet, ☐ saturated/unsaturated) **N/A**

11. Mark the observed wetland area(s) on the attached site map.

    N/A

Table 1. Wildlife Species Identified by Song, Observation, Sign, or Report. Garvey Elevator Site, Hastings, Nebraska.

Species	Genus Species [1]	Protective Status [2]	Notes
Birds			
American goldfinch	*Carduelis tristis*		Seen and heard on and adjacent to the site
Barn swallow	*Hirundo rustica*		Feeding and flying over the agricultural fields
Blue grosbeak	*Guiraca caerula*		A pair feeding in the milo
Brown thrasher	*Toxostoma rufum*		On the edges of the wooded area
Chipping sparrow	*Spizella passerina*		Very common
Eastern phoebe	*Sayornis phoebe*		Using edges between the wooded area and the agricultural fields
European starling	*Sturnus vulgaris*		Using the powerlines along the southern boundary road
Field sparrow	*Spizella pusilla*	**SSC**	Adults seen with young
Grasshopper sparrow	*Ammodramus savannarum*		Heard in agricultural fields
Gray catbird	*Dumetella carolinensis*		On the edges of the wooded area
House sparrow	*Passer domesticus*		On adjacent residential areas
Indigo bunting	*Passerina cyanea*		Using the powerlines alone the southern boundary road
Mourning dove	*Zenaida macroura*		Very common
Northern cardinal	*Cardinalis cardinalis*		On the edges of the wooded area
Northern oriole	*Icterus galbula*		Seen in trees of wooded area
Purple martin	*Progne subis*		Feeding and flying over the agricultural fields
Red-headed woodpecker	*Melanerpes erythrocephalus*	**SSC**	Seen using the telephone poles along the southern border of the site
Red-winged blackbird	*Agelaius phoeniceus*		Seen flying back and forth between the site and the property to the south
Rock pigeon	*Columba livia*		Approximately 100 seen on the east side of the Flat Storage building, the Grain Bin, and the south side of the Grain Elevator
Song sparrow	*Melospiza melodia*		Seen using the area along the southern boundary
Turkey vulture	*Cathartes aura*		Flying overhead
Western kingbird	*Tyrannus verticalis*		Using the powerlines along the southern boundary road
Mammals			
Domestic cat	*Felix sp.*		Seen near property
Domestic dog	*Canus sp.*		Tracks and scat observed
Northern raccoon	*Procyon lotor*		Tracks observed
Red fox	*Vulpes vulpes*		Tracks and scat observed
Striped skunk	*Mephitis mephitis*		One found dead on the road near the site
White-tailed deer	*Odocoileus virginianus*		Tracks and laydown area on the east edge of wooded area
Other animals			
Butterflies	*unknown*		
Dragonflies	*unknown*		
Grasshoppers	*unknown*		Numerous
Mosquitos	*Unknown*		

[1] Latin genus species names are in accordance with the Robbins et al. , 2001 (birds) and Bowers et al. 2004 (mammals).

[2] **SSC** = Nebraska State Special Concern species

FZ00234tbl2

FIGURE(S)

Filename: X:/EPA009/Garvey/RI_FS/
Site_Loc_Map.mxd
Project: EP9033.01.46.11
Revised: 04/06/11 ST
Source: ESRI StreetMap USA
Nebraska DNR

HGL HydroGeoLogic, Inc

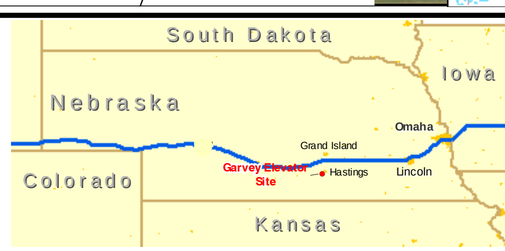

Figure 1
Site Location Map
Garvey Elevators Site
Hastings, NE

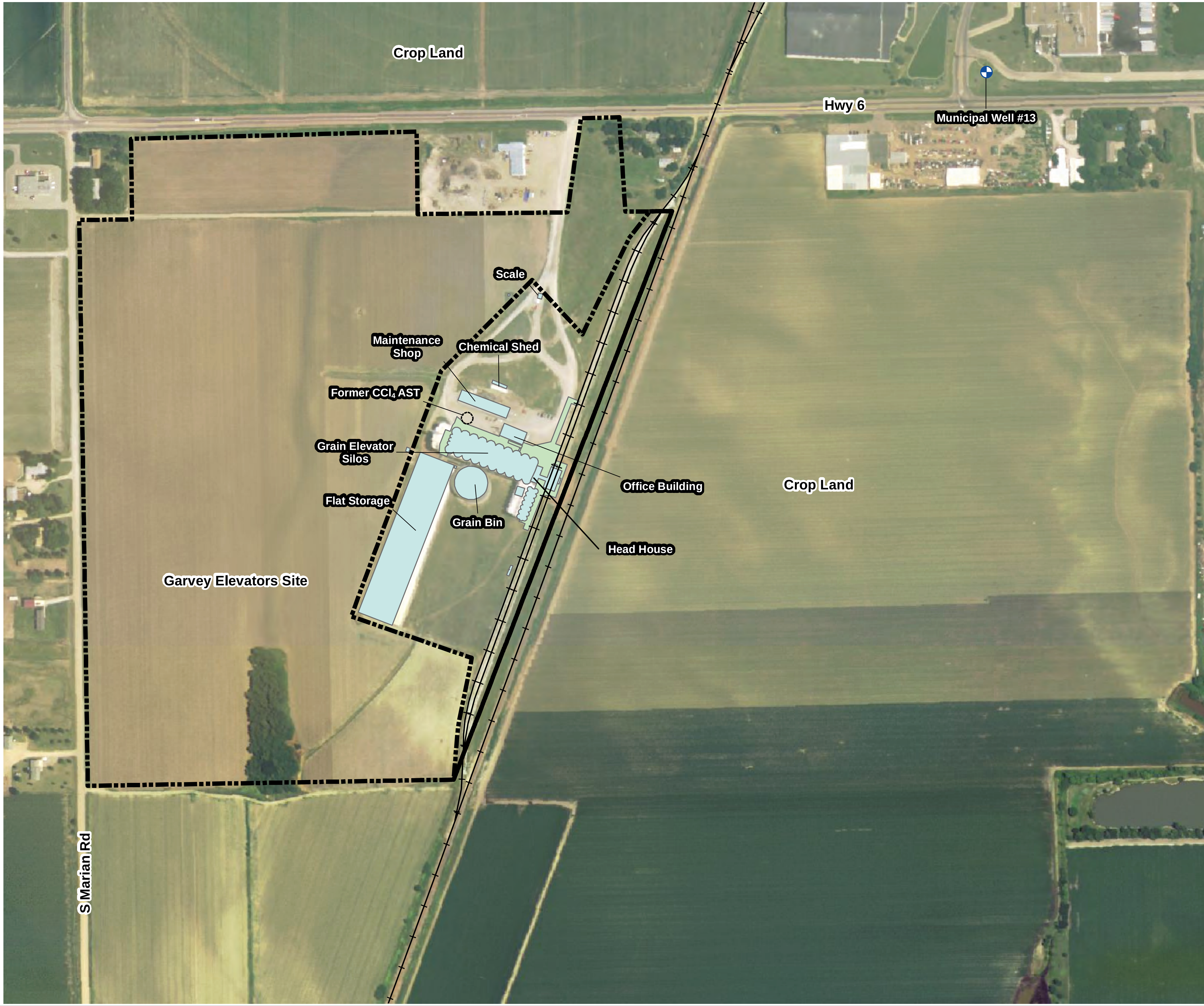

Figure 2
Current Site Map

Legend

Garvey Property Boundary

Concrete Paved Area

Buildings

Gravel Road

Railroad

0 200 400 800

Feet

N

Filename: X:/EPA009/Garvey/Remedial_Inv_Rpt/(2)SiteMap.mxd
Project: EP9033.01.12.05
Revised: 04/06/11 RL
Source: ENSR GDB 2008, DNR

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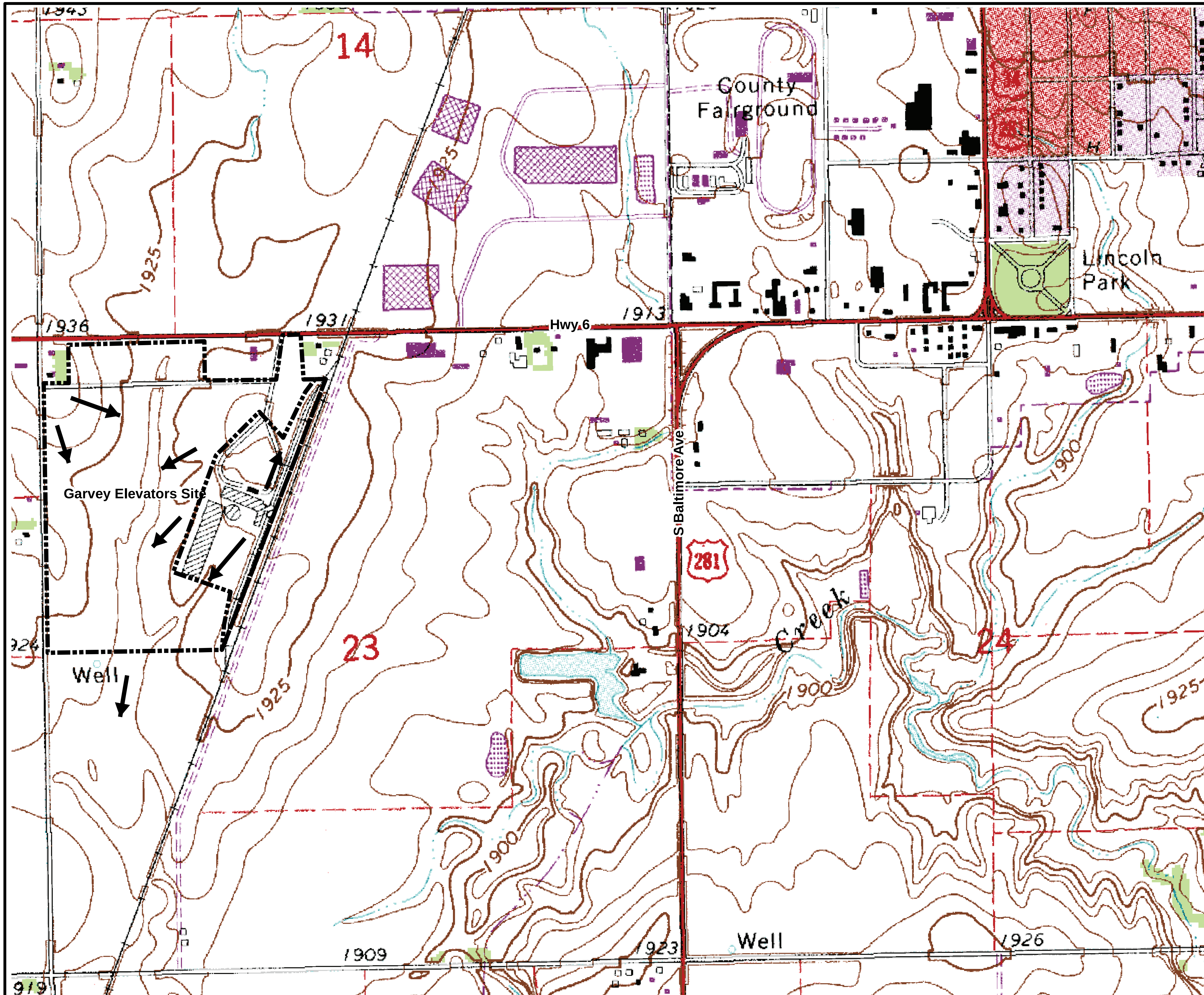
Figure 3
Garvey Elevators Site
Topography/Hydrology



Legend

Garvey Property Boundary
Surface Water Flow

0 450 900 1,800
Feet

N

Filename: X:/EPA009/Garvey/SLERA/TopoMap.mxd
Project: EP9033.01.48.01
Revised: 04/06/11 RL
Source: USGS, 1983

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Figure 4
On-Site Drainage

Legend

- Garvey Property Boundary
- Culverts
- Buildings
- Former Steel Grain Bin
- Concrete Paved Area
- Gravel Road
- Railroad
- Drainageways

0 150 300 600
Scale In Feet

N

Filename: X:/EPA009/Garvey/RI_FS/
OnSite_Drainage.mxd
Project: EP9033.01.46.11
Revised: 04/06/11 RL
Source: ENSR GDB 2008, DNR

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Attachment 1
Photo Log
Garvey Elevator Site
Hastings, Nebraska
August 24, 2009

Photo 1

Looking northeast from the southwest corner to the Garvey Elevator

Photo 2

Looking northeast from the southwest corner to the Garvey Elevator

Photo 3

From north tip of wooded area looking northeast

Photo 4

Milo crop on the west side of the wooded area looking northeast

Photo 5

From northern tip of wooded area looking northeast to the Garvey Elevator

Photo 6

From the northern tip of wooded area looking north at area of formerly standing water

Photo 7

Looking north along drainage ditch

Photo 8

Cottonwood trees in the wooded area

Photo 9

Looking west into the wooded area

Photo 10

East side of wooded area looking north, with deer lay down area to the left

Photo 11

Looking northeast up the drainage ditch toward the Garvey Elevator

Photo 12

Looking northeast from S. Marian Road

Photo 13

Looking southeast from S. Marian Road

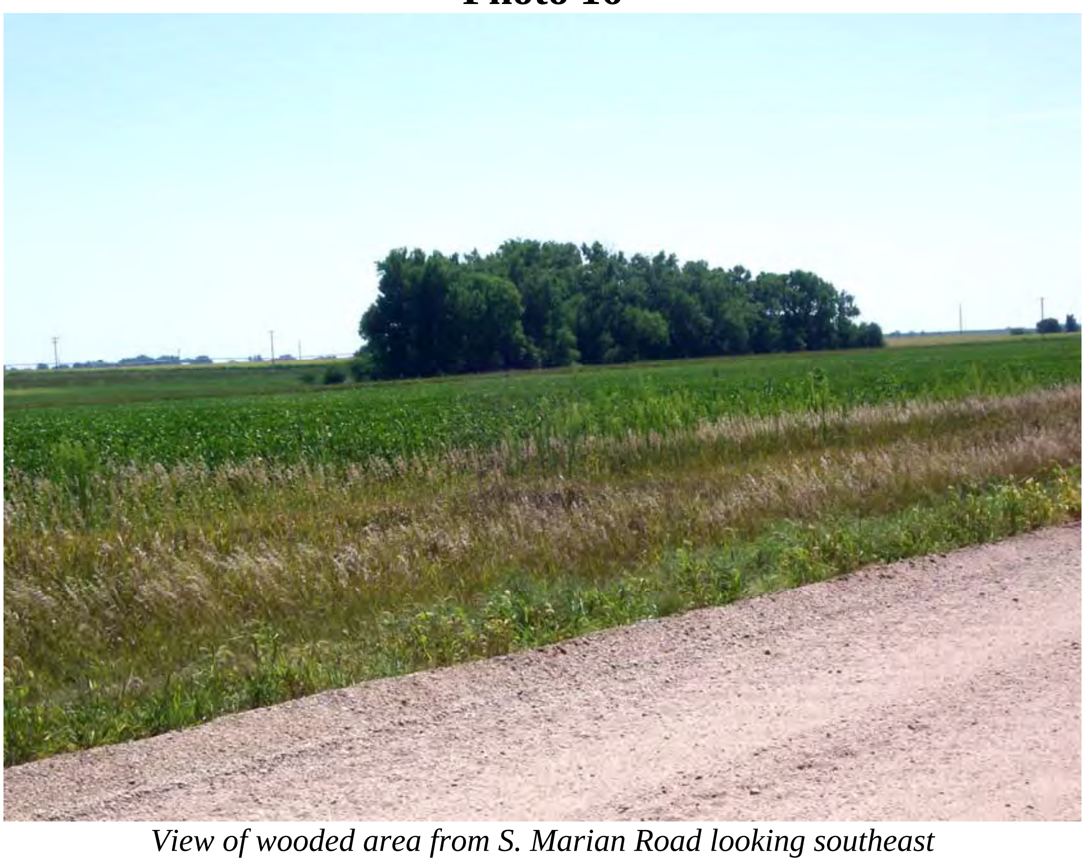
Photo 14

Looking south to the Garvey Elevator

Photo 15

From the east-west dirt road at the north end looking south along the drainage ditch

Photo 16



View of wooded area from S. Marian Road looking southeast

Photo 17

Distant view of Garvey Elevator facility, looking east from S. Marian Road

Photo 18

Rock pigeons on the east side of the Flat Storage building

Photo 19

Distant view of rock pigeons on the Flat Storage building

Photo 20

Rock pigeons on the east side of the Flat Storage building with rail car

Photo 21

Garvey Elevator facility, looking northwest

Photo 22

North portion of the Garvey Elevator facility, looking west

Photo 23

North parking lot west, with Garvey Elevator agricultural fields in background

Photo 24

View of Garvey Elevator from Highway 6, looking southwest

ATTACHMENT 2

CONSULTATION LETTER RESPONSES FROM USFWS AND NDNR

NEBRASKA
—GAME PARKS—

Nebraska Game and Parks Commission
2200 N. 33rd St. • P.O. Box 30370 • Lincoln, NE 68503-0370 • Phone: 402-471-0641 • Fax: 402-471-5528

November 17, 2010

Rachel Lee
HydroGeoLogic, Inc.
6340 Glenwood, Suite 200, Bldg #7
Overland Park, KS 66202

Re: Garvey Elevator SLERA, Hastings, Adams County, Nebraska

Dear Ms. Lee:

Please make reference to your letter dated October 8, 2010. This letter is in response to your request for information regarding threatened and endangered species, natural communities, state properties, and other sensitive environmental conditions within the investigation area in Hall County, Nebraska. As we understand it, the project involves construction of an elevator. The investigation area includes the location of the elevator and the associated contamination plume. The Nebraska Game and Parks Commission (Commission) has responsibility for protecting threatened and endangered species under authority of the Nongame and Endangered Species Conservation Act (Neb. Rev. Stat. § 37-801-11).

Threatened and Endangered Species
This project is within the range of the state and federally listed endangered whooping crane (*Grus americana*). Whooping cranes use shallow, sparsely vegetated streams and wetlands to feed and roost during their migration. The migration period in Nebraska is approximately March 23 through May 10 and from September 16 through November 16. In addition, a 3-mile wide, 56 mile long reach of the Platte River from Lexington to Denman, Nebraska has been federally listed as critical habitat for whooping cranes. Alterations to feeding and roosting habitats, human disturbance and depletions of instream flows have negative impacts on whooping cranes.

The proposed project is within the whooping crane migration corridor. There is a confirmed sighting of a whooping crane within 5 miles of the project area. However, there does not appear to be suitable roosting habitat for cranes within the investigation area.

State Wildlife Management and Recreation Areas
The following Commission properties are located to the southeast and northeast of the investigation area. There are no Commission properties or managed areas directly within the investigation area.

Ayr Lake WMA (Township 7, Range 9 West, Section 33)
DLD SRA (Township 7 Range 9 West, Section 13)

The information provided in this letter is based on a review of the material you sent, aerial photographs, topographic maps and our Nebraska Natural Heritage Database. Please note that this correspondence does not satisfy requirements of the Nongame and Endangered Species Conservation Act. Under authority of Neb. Rev. Stat. §37-807 (3) of the Nebraska Nongame and Endangered Species Conservation Act, all Nebraska state agencies are required to consult with the Nebraska Game and Parks Commission to ensure that any actions authorized, funded or carried out by them do not jeopardize the continued existence of a state listed species. This requirement would extend to any state permit issued.

All federally listed threatened and endangered species are also state listed. For assessment of potential impacts on federally listed, candidate or proposed threatened or endangered species, please contact John Cochnar, Nebraska Field Office, U.S. Fish and Wildlife Service, 203 W. Second St., Grand Island, NE 68801.

Thank you for the opportunity to comment. If you have any questions or need additional information, please feel free to contact me at (402) 471-5438 or michelle.koch@nebraska.gov.

Sincerely,

Michelle R Koch

Michelle R. Koch
Environmental Analyst Supervisor
Nebraska Natural Heritage Program
Nebraska Game and Parks Commission

CC: John Cochnar, USFWS
Jeanine Lackey, USFWS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Nebraska Field Office
203 West Second Street
Grand Island, Nebraska 68801

November 9, 2010

FWS-NE: 2011-064

Rachel Lee
HydroGeoLogic, Inc
6340 Glenwood, Suite 200, Building # 7
Overland Park, KS 66202

RE: Screening Level Ecological Risk Assessment, Garvey Elevator, Adams County, NE.

Dear Ms. Lee:

This responds to your October 12, 2010, request for technical assistance from the U.S. Fish and Wildlife Service (Service) regarding the identification of sensitive environmental conditions contained in an investigation area near Hastings, potentially affecting 1286 acres, Adams County, Nebraska. The Service has responsibility for conservation and management of fish and wildlife resources for the benefit of the American public under the following authorities: 1) Endangered Species Act of 1973 (ESA), 2) Fish and Wildlife Coordination Act (FWCA), 3) Bald and Golden Eagle Protection Act (Eagle Act), and 4) Migratory Bird Treaty Act (MBTA). The National Environmental Policy Act (NEPA) requires compliance with all of these statutes and regulations. The project proponent and lead federal agency are responsible for compliance with these federal laws.

The Service has special concerns for endangered and threatened species, migratory birds, and other fish and wildlife and their habitats. Habitats frequently used by fish and wildlife species are wetlands, streams, riparian (streamside) woodlands, and grasslands. Special attention is given to proposed developments that include modification of wetlands and streams, loss of riparian habitat, or contamination of habitats. When this occurs, the Service recommends ways to avoid, minimize, or compensate for adverse affects to fish and wildlife and their habitats.

ENDANGERED SPECIES ACT

Pursuant to section 7 of ESA, every Federal agency, in consultation or conference with the Service, is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally listed or proposed species and/or result in the destruction or adverse modification of designated and/or proposed critical habitat.

Further, when a proposed project may affect endangered or threatened species and/or critical habitat, section 7 consultation is required with the Service. In accordance with section 7(a)(2) of ESA, the Federal agency should determine if any federally listed/proposed threatened or endangered species and/or designated/proposed critical habitat would be directly and/or indirectly affected by the proposed project. The assessment of potential impacts (direct, indirect, and cumulative) must include an "affect" or "no effect" determination and must be presented to the Service in writing. If the Service agrees with the determination made by the lead federal agency, this office would provide a letter of concurrence. If federally listed/proposed species and/or designated/proposed critical habitat would be adversely affected by the proposed project, the federal agency will need to formally request further section 7 consultation with the Service prior to making any irretrievable or irreversible commitment of federal funds or issuing any federal permits or licenses.

In accordance with section 7 of ESA, the Service has determined that the following federally listed species may occur in the proposed project area or be affected by the proposed project:

Listed Species	Expected Occurrence
Whooping Crane (*Grus Americana)*	Migration

Whooping Crane

Whooping cranes, federally listed as endangered, use shallow, sparsely vegetated streams, rivers, wet meadows, and wetlands to feed and roost during migration. Major river systems and their associated habitats, used by the whooping crane include the Platte, Loups, Republican, and Niobrara rivers. The migration periods in Nebraska are from approximately March 23 through May 10 and from September 16 through November 16. In addition, a 3-mile-wide, 56-mile long reach of the Platte River from Lexington to Denman, Nebraska has been federally listed as critical habitat for whooping cranes. Alterations to feeding and roosting habitats such as wet meadows and hayfields, human disturbance, and depletions of instream flows have negative impacts on the whooping crane.

According to the map provided by the consultant, the proposed project lies within the whooping crane migration corridor. Based on a review of our records, there is a confirmed whooping crane sighting located within 5 miles of the proposed project area, however, there are no recent confirmed sightings of whooping cranes within ½ miles of the proposed project site.

In accordance with section 7 of ESA, the Service has determined that, although the project site is located within the occurrence range of the whooping crane, the project will not likely impact the whooping crane.

All federally listed species under ESA are also State-listed under the Nebraska Nongame and Endangered Species Conservation Act. However, there are also State-listed species that are not federally listed. To determine if the proposed project may affect State-listed species, the Service recommends that the project proponent contact Michelle Koch, Nebraska Game and Parks Commission, 2200 N. 33rd Street, Lincoln, NE 68503-0370

REVIEW, COMMENTS, AND RECOMMENDATIONS ON THE PROPOSED PROJECT ACTION UNDER OTHER FISH AND WILDLIFE STATUTES

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle *(Haliaeetus leucocephalus)* and golden eagle (*Aquila chrysaetos*). The golden eagle is found in arid, open country with grassland for foraging in western Nebraska and usually near buttes or canyons which serve as nesting sites. Bald eagles utilize mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska. Additionally, many eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-mile of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. According to our records there are no active bald eagle nests located within or near the proposed project area.

Migratory Bird Treaty Act

Under the Migratory Bird Treaty Act, construction and/or work activities taking place in grasslands (pastures), roadsides, wetland, stream, and woodland habitats, and those that occur on bridges (e.g., which may affect swallow nests on bridge girders) that would otherwise result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of April 1 to July 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15, whereas sedge wrens which occur in some wetland habitats normally nest from July 15 to September 10. The Service strongly recommends that construction activities be carried out at times other than during the primary nesting period to avoid taking migratory birds.

In the event that vegetation removal or disturbance cannot be avoided during peak breeding season, the Service recommends that the project manager (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats (roadside grasslands, marshes, trees, and shrublands) to determine the absence or presence of nesting migratory birds. Surveys must be conducted during the species nesting season. The Service further recommends that field surveys for nesting birds be thoroughly documented and that such documentation be maintained on file by the project proponent until such time as construction on the proposed project has been completed.

The Service requests that the following be provided to this office prior to the initiation of the proposed project if the above conditions occur. The purpose of the request is to assist the project proponent in avoiding the unnecessary take of migratory birds:

a) A copy of any survey(s) for migratory birds done in conjunction with this proposed project, if any. The survey should provide detail in regards to survey methods, date and time of survey, species observed/heard, and location of species and species nests observed relative to the proposed project site.

b) Written description of any avoidance measures implemented at the proposed project site to avoid the take of migratory birds.

c) Written description of any circumstances where it has been determined by the project proponent that one or more active bird nests cannot be avoided by the planned construction activities.

The Service appreciates the opportunity to review and comment on the subject project. Should you have questions regarding these comments, please contact Ms. Jeanine Lackey within our office at jeanine_lackey@fws.gov or (308)382-6468, extension 14.

Sincerely,

John Cochnar

for Michael D. George
Nebraska Field Supervisor

Enclosure

cc: NGPC; Lincoln, NE (Attn: Michelle Koch)