HGL
HydroGeoLogic, Inc
Exceeding Expectations

Redactions-CBI

Kansas City Operations

Part 1 of 4

This document relates to Doc ID

30216104, 30216105, 30216106

January 6, 2012

Mr. Jim Seiler
AES Project Officer
U.S. Environmental Protection Agency, Region 7
901 North 5th Street
Kansas City, KS 66101

RE: Semiannual Groundwater Sampling Report, September 2011 Sampling Event for the Garvey Elevator Site, Hastings, Nebraska.
U.S. EPA Region 7 AES Contract No. EP-S7-05-05; Task Order No. 0034
EPA Task Order Project Officer: Brian Zurbuchen, Ph.D.

Dear Mr. Seiler:

HydroGeoLogic, Inc. (HGL) is pleased to submit one hard copy of the Semiannual Groundwater Sampling Report, September 2011 Sampling Event for the Garvey Elevator Site, Hastings, Nebraska. This document was prepared in accordance with Task Order 0034; our EPA-approved Task Order Proposal Amendment 1, Revision 1 submitted on September 19, 2011.

As requested by EPA, two additional hard copies of the Semiannual Groundwater Sampling Report, September 2011 Sampling Event will be sent to Laurie Brunner at the Nebraska Department of Environmental Quality. Should you have any questions or comments, please contact us at 913-317-8860.

Sincerely,

[redacted], P.G.
HGL

for [redacted], P.G., CHMM
AES Program Manager

Enclosures

The following ~~Appendices~~ Attachments are available only on CD

Attachments 5 + 6

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30284377

SEMIANNUAL GROUNDWATER SAMPLING REPORT
SEPTEMBER 2011 SAMPLING EVENT
GARVEY ELEVATOR SITE
HASTINGS, NEBRASKA

TO:	Brian Zurbuchen, Ph.D., EPA TOPO
FROM:	[redacted], P.G., HGL Project Manager
THROUGH:	[redacted].G., CHMM, AES Program Manager
DATE:	January 6, 2012
SUBJECT:	Semiannual Groundwater Sampling, Garvev Elevator Site
CONTRACT NO:	EP-S7-05-05
TASK ORDER NO:	0034

1.0 INTRODUCTION

This data summary report describes the semiannual field sampling activities completed by HydroGeoLogic, Inc. (HGL) in September 2011 at the Garvey Elevator Site (Garvey) in Hastings, Nebraska (see Figure 1 in Attachment 2). This sampling effort is a part of the ongoing activities to support the remedial action being conducted by HGL under the Region 7 U.S. Environmental Protection Agency (EPA) Architect and Engineering Services (AES) contract EP-S7-05-05, task orders 0034 and 0046.

The site background, history of operations, and past investigations are described in detail in the final *Remedial Investigation Report* (HGL, 2011) prepared by HGL in April 2011 under task order 0033; work at the site commenced under task order 0033 and is continuing under task orders 0034 and 0046. A brief chronology of regulatory actions at the site follows:

- July 1994. Garvey notified the Nebraska Department of Environmental Quality (NDEQ) of a release of organic solvents and the presence of groundwater contamination at its grain storage facility (EPA, 2010). The discovery date of the carbon tetrachloride release was June 16, 1994. Carbon tetrachloride was detected in an on-site water supply well at 199 micrograms per liter (μg/L) during a Phase I Environmental Site Assessment (Terracon, 1994).
- April 1995. Garvey Elevators, Inc. entered the NDEQ Remedial Action Program Monitoring Act (RAPMA) Voluntary Cleanup Program (VCP). While in the VCP, Garvey conducted further site characterization, installed the groundwater extraction and treatment (GET) and soil vapor extraction (SVE) systems, and provided alternative drinking water sources to impacted residents.
- 1997. The city of Hastings notified NDEQ that carbon tetrachloride was detected in municipal well #13 located 1,500 feet northeast of the former Garvey property.
- 2002 and 2003. EPA assisted NDEQ with site evaluations.
- September 14, 2005. The Garvey Elevator Site was placed on the National Priorities List.

- September 28, 2005. Garvey Elevators, Inc., AGP, and EPA entered into an agreement to allow proceeds from the sale of the grain elevator to AGP to be used for investigation and site cleanup (EPA, 2005). Garvey subsequently agreed to conduct investigation and source area treatment activities at the Garvey Elevator Site. In a separate Agreement with AGP, Garvey Elevators, Inc. placed money into an escrow account to fund response actions at the site.
- March 27, 2008. Garvey Elevators, Inc., filed Chapter 7 bankruptcy.
- April 2008. EPA instructed Garvey Elevators, Inc., and its contractors to stop work at the site.
- May 2008. EPA took over ongoing removal activities, including providing alternative water supplies to impacted residents, and operation and maintenance of the GET and SVE systems. The EPA designated two operable units (OUs) at the Site. OU1 consists of soil and groundwater contamination that is generally within the boundaries of the 22-acre property historically used by Garvey in its grain storage facility operations. OU2 consists of the contaminated groundwater outside of OU1, in the general direction of groundwater flow to the east.
- December 2008. EPA initiated a fund-lead Remedial Investigation/Feasibility Study (RI/FS) that includes a human health risk assessment and screening level ecological risk assessment.
- June 2010. EPA published an Interim Record of Decision (ROD) for Garvey Elevator Site OU1 that addressed soil and groundwater contamination on site. The selected interim remedy included continued operation, and possible expansion, of the existing GET system (EPA, 2010).

Groundwater monitoring has been ongoing at the site since the Interim ROD was published. Five rounds of sampling have been conducted: June 2010 (baseline sampling), September 2010, December 2010, March 2011, and September 2011. The baseline sampling event was documented in the RI report. This report focuses on the last round of sampling conducted in September 2011 but also presents a summary of the analytical results and groundwater elevation data for the other three sampling events. Beginning with the September 2011 event, the current sampling plan calls for quarterly sampling at OU1 and semiannual sampling at OU2.

Groundwater level measurements and elevations and the analytical data are summarized in tables in Attachment 1. Maps and figures are presented in Attachment 2. Trend graphs showing concentration trends for carbon tetrachloride and chloroform in selected monitoring wells are presented in Attachment 3. The complete analytical results are tabulated in Attachment 4. Field forms and analytical data reports are provided in electronic form as Attachments 5 and 6, respectively.

2.0 FIELD ACTIVITIES

Field activities for the September 2011 groundwater sampling event were conducted September 26 through October 3, 2011, and included water level gauging and collecting groundwater samples from monitoring wells in the current sampling program. Samples also were collected from the old and new water wells on the Dean Rolls property. The well locations are shown on Figure 2 (Attachment 2).

Field activities were conducted in accordance with the EPA-approved Work Plan and Field Sampling Plan (FSP) Addendum prepared under task order 0033 (HGL, 2009 and 2010). Any deviations from the procedures presented in the Work Plan and FSP are discussed in the relevant subsection. Quality control (QC) samples were collected to ensure usability of the data as detailed in Section 2.3.

2.1 WATER LEVEL GAUGING

On September 26 and 27, 2011, the water levels from 70 monitoring wells were measured with an electronic water level probe before initiating groundwater sampling activities. The water levels in the Waterloo Multilevel System monitoring wells (MW-19A/C, MW-20A/C/D/E, MW-30A/C/D/E, and MW-31A/C/E) were recorded at the GET system programmable logic controller (PLC). Dedicated transducers in the Waterloo wells were attached to a telemetry system in April 2011, which relays water level measurements to the PLC. Table 1 in Attachment 1 summarizes the water level measurements and associated groundwater elevations.

During past sampling events, a photoionization detector (PID) was utilized to measure possible organic vapor concentrations emanating from the monitoring wells. PID readings were collected from the wellhead immediately upon opening the well cap. Because no PID readings were measured above background, the wellhead monitoring was discontinued after the March 2011 sampling event. PID readings collected before March 2011, were recorded on the water level measurement field forms (Attachment 5).

The water level measurements and groundwater elevations for the September 2010, December 2010, and March 2011 sampling events also are included in Table 1. During these sampling events, all water levels were measured with an electronic water level probe except for the Waterloo Multilevel System monitoring wells. For these, a Geokon 404 direct readout unit was used to measure water levels. This consisted of attaching the 404 unit to the dedicated vibrating wire transducer leads and collecting pressure readings in digits and temperature in degrees Celsius. The readings, along with the pressure and temperature measurements for each transducer, were then used to calculate the water level.

2.2 GROUNDWATER SAMPLING

During the September 2011 semiannual sampling event, 85 water samples (not including QC samples) were collected from 70 monitoring wells, 13 multilevel wells, and 2 private wells. The two private wells (shown on Figure 2) are included in the sampling as a part of OU2.

All samples were submitted to the EPA Region 7 laboratory for volatile organic compound analysis (VOC) analysis using Region 7 Method 3230.1F. It should be noted that September 2011 was the first sampling event to include the following monitoring wells that were installed as a part of OU1 in late fall 2010: MW-47B/C/D, MW-48B/C/D, MW-49B/C/D, MW-50B/C/D, and MW-51B/C/D.

Purging and Sampling

Two field sampling teams were utilized to purge and sample the site groundwater monitoring wells.

Groundwater samples were collected from the monitoring wells using low-flow purging (micro-purging) and sampling methods. The low-flow groundwater sampling forms are included in Attachment 5. The monitoring wells were purged and sampled using a portable bladder pump and dedicated tubing. The purge rate was adjusted as low as possible to minimize drawdown and did not exceed 0.5 liters per minute (L/min). The water level in the well was monitored throughout the purging process.

Physical parameters of pH, temperature, specific conductivity, oxidation reduction potential, dissolved oxygen, turbidity, and water levels were recorded every 3 to 5 minutes during the purging process (Attachment 5). Purging continued until the parameters stabilized as specified in the Work Plan (HGL, 2009).

Groundwater samples were collected directly from the discharge tubing before the flow-through cell, and directly into the appropriate sample container. The pumping rate remained constant during purging. After sampling at each well, the pumps were decontaminated as described in the Work Plan and summarized in Section 2.4. The tubing was stored between sampling events in the nearby W. Highway 6 & Highway 281 Site GET system building.

Copies of the EPA sample collection sheets and the associated chain of custody records are included in Attachment 5.

2.3 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING

In addition to the 85 groundwater samples collected in September 2011, 23 samples were collected to fulfill QC requirements (HGL, 2009): 9 duplicates, 7 trip blanks, 5 matrix spike/matrix spike duplicate (MS/MSD) samples, and 2 equipment rinsate blanks. Duplicate samples were collected from the following wells:

- MW-4B (duplicate sample 5511-38-FD)
- MW-13C (duplicate sample 5511-22-FD)
- MW-30C (duplicate sample 5511-5-FD)
- MW-48C (duplicate sample 5511-57-FD)
- MW-50C (duplicate sample 5511-40-FD)
- MW-12C (duplicate sample 5512-28-FD)
- MW-42D (duplicate sample 5512-17-FD)
- MW-45C (duplicate sample 5512-24-FD)
- MW-105D (duplicate sample 5512-10-FD)

The five MS/MSD samples were collected from monitoring wells:

- MW-31C (sample 5511-1)
- MW-3E (sample 5511-28)
- MW-18D (sample 5512-1)
- MW-106C (sample 5512-20)
- MW-12D (sample 5512-26).

The rinsate blanks were collected after decontaminating equipment used at wells MW-48D (sample 5511-51) and MW-106D (sample 5512-22).

2.4 EQUIPMENT DECONTAMINATION

All decontamination procedures were conducted in accordance with the Work Plan (HGL, 2009). Portable bladder pumps and other sample equipment that could not be damaged by water were decontaminated after purging and sampling each well. The portable bladder pumps and equipment were decontaminated by being placed in a wash tub containing Alconox or low-sudsing non-phosphate detergent along with potable water. The interior of pumps were flushed for at least 3 minutes and the exteriors (and non-pump equipment) were scrubbed with a bristle brush or similar utensil. Equipment was then rinsed with tap water in a second wash tub followed by a deionized water rinse.

2.5 INVESTIGATION-DERIVED WASTE MANAGEMENT

Purged groundwater and decontamination fluids were managed as liquid investigation-derived waste (IDW). The liquid IDW from the September 2011 groundwater sampling event was treated through the on-site GET system. Used personal protective equipment and expendable sampling supplies were collected in garbage bags and disposed of as municipal solid waste. During the previous sampling events, liquid IDW was containerized and transported to the local publicly owned treatment works for treatment.

3.0 SEMIANNUAL GROUNDWATER RESULTS

Based on the known geology, the aquifer beneath the Site has been divided into aquifer zones as discussed in the RI Report (HGL, 2011). The zones and their descriptions are as follows:

- upper aquifer zone – Zones A/B, extending from the water table to the top of the upper aquitard (approximately 115 to 125 feet below ground surface [bgs]).
- medial aquifer zones – Zone C, extending from the base of the upper aquitard to the top of the lower aquitard (approximately 130 to 155 feet bgs).
- lower aquifer zone, extending from the base of the lower aquitard to the top of bedrock.
    - upper portion – Zone D (approximately 160 to 200 feet bgs)
    - lower portion – Zone E (approximately 200 to 235 feet bgs)

Both the water level and analytical data are presented based on these aquifer zones.

3.1 GROUNDWATER WATER LEVELS AND POTENTIOMETRIC SURFACE

Potentiometric maps for the September 2011 water level data were prepared based on static water levels from monitoring wells. The potentiometric surfaces for aquifer Zones A/B, C, and D/E are illustrated on Figures 3, 4, and 5, respectively. Based on the water level measurements, the potentiometric groundwater contours indicate the general groundwater flow is to the east/southeast, which is similar to the groundwater contours based on water level measurements in the June 2010 baseline sampling event and is consistent with regional groundwater flow.

As Figure 3 illustrates, groundwater flow in the upper aquifer zone (Zones A/B) beneath the site and downgradient is generally to the southeast. However, farther downgradient of the site, groundwater in this zone appears to flow in a more east-southeasterly direction.

The groundwater flow direction in the medial zone (Zone C, Figure 4) and lower aquifer zone (Zone D/E, Figure 5) throughout the study area is consistently to the east-southeast. It should be noted that monitoring of the medial aquifer zone ends at MW-106C approximately 3.2 miles downgradient of the site.

3.2 ANALYTICAL RESULTS

The September 2011 semiannual groundwater sample results are summarized in Tables 2 and 3 in Attachment 1. The full analytical results are tabulated in Attachment 4. The laboratory analytical reports are presented in Attachment 6. Carbon tetrachloride and trichloroethene (TCE) were the only two VOCs detected that exceeded the preliminary remediation goals (PRGs) for the site. The PRGs for both carbon tetrachloride and TCE are federal drinking water maximum contaminant levels (MCLs) of 5 micrograms per liter (μg/L). TCE exceeded the PRG at one location, MW-19A in OU1. Carbon tetrachloride exceeded the PRG at 27 locations:

Aquifer Zone A/B (Figure 6)

- MW-3B
- MW-4A
- MW-4B
- MW-5B
- MW-6A
- MW-19A
- MW-30A
- MW-31A
- MW-47B
- MW-48B
- MW-49B
- MW-50B
- MW-51B

Aquifer Zone C (Figure 7)

- MW-12C
- MW-13C
- MW-18C
- MW-47C
- MW-105C
- Old Rolls Well

Aquifer Zone D/E (Figure 8)

- MW-17D
- MW-18D
- MW-42D
- MW-44D
- MW-46-D1
- MW-46-D2
- MW-105D
- MW-42E

Carbon tetrachloride concentrations are illustrated on Figures 6, 7, and 8, which depict the concentrations by aquifer zone. The ranges of carbon tetrachloride detections observed in the three aquifer zones are as follows:

- Aquifer Zone A/B—1 µg/L to 1200 µg/L
- Aquifer Zone C—6.2 µg/L to 200 µg/L
- Aquifer Zone D/E—1 µg/L to 770 µg/L

Isoconcentration contours for carbon tetrachloride also are included on the figures. In general, the isoconcentration contours show the carbon tetrachloride plume to be relatively stable compared to the baseline sampling event in June 2010, as detailed in the RI Report (HGL, 2011). One difference appears in the lower aquifer zone (Zone D/E) in the vicinity of MW-17A/C/D. The observed carbon tetrachloride concentration in MW-17D exceeded the PRG for the first time since sampling began at this well.

The historical analytical data was combined with the recent data and used to generate trend graphs for carbon tetrachloride and chloroform in six monitoring wells located on the Garvey facility property. These are included in Attachment 3. The dataset was compiled from all sampling results from previous investigations and sampling events, and extends over the period from June 1994 to September 2011. In general, the trend graphs all continued the same downward trend discussed in the RI. At MW-6E, a spike in carbon tetrachloride concentration was observed during the baseline sampling in June 2010, but has been nondetect since that time, as illustrated on trend graph 23.

The analytical results for the September 2010, December 2010, and March 2011 sampling events are summarized in Tables 2 and 3 in Attachment 1 and the complete results are tabulated in Attachment 4. The analytical laboratory reports for all four sampling events are included in Attachment 6 in electronic copy only.

4.0 REFERENCES

HydroGeologic, Inc. (HGL), 2009. Revised Final Work Plan, Remedial Investigation/Feasibility Study, Garvey Elevator Site, Hastings, Nebraska. June.

HGL, 2010. Final Work Plan and Field Sampling Plan Addendum for Remedial Investigation Activities, Garvey Elevator Site, Hastings, Nebraska. March.

HGL, 2011. Final Remedial Investigation Report, Garvey Elevator Superfund Site, Hastings, Nebraska. April.

Terracon, 1994. Phase I Environmental Site Assessment, Garvey Elevators Grain Storage Facility, Highway 6, Hastings, Nebraska. May 1994.

U.S. Environmental Protection Agency (EPA), 2005. Agreement, Garvey Elevators, Inc. and AGP Grain Marketing LLC with U.S. EPA Region 7. Docket No. CERCLA-07-2005-0268. September.

EPA, 2010. Interim Record of Decision, Garvey Elevator Superfund Site Operable Unit 1, Hastings, Nebraska. June.

ATTACHMENTS:
Attachment 1 Tables
Attachment 2 Figures
Attachment 3 Trend Graphs
Attachment 4 Tabulated Analytical Data
Attachment 5 Field Sheets (Electronic)
Attachment 6 Laboratory Analytical Reports (Electronic)

ATTACHMENT 1

TABLES

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Table 1
Monitoring Well Water Levels and Elevations
Garvey Elevator Site
Hastings, NE

Site	Well ID	State Plane Coordinates		Top of Casing Elevation (ft amsl)	Ground Surface Elevation (ft amsl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Top of Screen Elevation (ft amsl)	Bottom of Screen Elevation (ft amsl)	Depth to Water (ft btoc)					Water Level Elevation (ft amsl)				
		Northing	Easting							Sep-10	Dec-10	Mar-11	Apr-11	Sep-11	Sep-10	Dec-10	Mar-11	Apr-11	Sep-11
OU1	MW-1A	270590.926	2080164.407	1927.08	1925.80	102	117	1823.80	1808.80	112.66	112.33	111.73	NR	111.83	1814.42	1814.75	1815.35	NR	1815.25
OU1	MW-2A	271240.41	2080539.870	1930.22	1927.33	103	118	1824.33	1809.33	116.11	115.59	115.11	NR	115.03	1814.11	1814.63	1815.11	NR	1815.19
OU1	MW-3A	270755.17	2080773.994	1934.27	1930.99	108	123	1822.99	1807.99	122.17	121.35	120.85	NR	120.70	1812.10	1812.92	1813.42	NR	1813.57
OU1	MW-3B	270761.378	2080778.055	1932.75	1931.07	130.6	135.5	1800.47	1797.57	120.71	120.05	119.82	NR	119.67	1812.04	1812.70	1812.93	NR	1813.08
OU1	MW-3D	270763.009	2080754.275	1933.37	1931.46	171	176	1760.46	1755.46	120.59	119.96	120.10	NR	118.58	1812.78	1813.41	1813.27	NR	1814.79
OU1	MW-3E	270744.057	2080767.604	1932.25	1930.99	233.4	238.4	1697.59	1692.59	119.47	118.86	119.00	NR	118.46	1812.78	1813.39	1813.25	NR	1813.79
OU1	MW-4A	270341.995	2080827.075	1931.60	1931.84	108.5	123.5	1823.34	1808.34	119.34	118.93	118.44	NR	118.50	1812.26	1812.67	1813.16	NR	1813.10
OU1	MW-4B	270342.585	2080832.776	1931.38	1931.70	127	132	1804.70	1799.70	119.31	118.74	118.29	NR	118.40	1812.07	1812.64	1813.09	NR	1812.98
OU1	MW-5A	269943.836	2080752.777	1930.26	1930.06	107.5	122.5	1822.56	1807.56	117.94	117.54	117.03	NR	117.19	1812.32	1812.72	1813.23	NR	1813.07
OU1	MW-5B	269947.071	2080745.584	1931.72	1930.12	129	132	1801.12	1798.12	119.02	118.64	118.13	NR	118.33	1812.70	1813.08	1813.59	NR	1813.39
OU1	MW-5D	269930.791	2080740.508	1931.87	1929.85	162	167	1767.85	1762.85	119.20	118.61	118.36	NR	118.21	1812.67	1813.26	1813.51	NR	1813.66
OU1	MW-6A	271237.345	2081216.968	1931.99	1929.48	107.5	122.5	1821.98	1806.98	118.49	118.19	117.70	NR	117.55	1813.50	1813.80	1814.29	NR	1814.44
OU1	MW-6D	271244.17	2081221.205	1931.14	1929.46	163.5	173.5	1765.96	1755.96	118.95	118.32	118.73	NR	118.01	1812.19	1812.82	1812.41	NR	1813.13
OU1	MW-6E	271244.606	2081208.806	1932.13	1929.65	225	235	1704.65	1694.65	119.89	119.25	119.66	NR	118.96	1812.24	1812.88	1812.47	NR	1813.17
OU1	MW-7A	269088.475	2079699.700	1923.22	1920.92	98	113	1822.92	1807.92	109.20	108.49	107.85	NR	108.18	1814.02	1814.73	1815.37	NR	1815.04
OU1	MW-7B	269088.781	2079692.537	1923.84	1920.89	130	135	1790.89	1785.89	109.85	109.16	108.46	NR	108.87	1813.99	1814.68	1815.38	NR	1814.97
OU1	MW-8A	271214.203	2079067.544	1943.22	1940.80	114.5	129.5	1826.30	1811.30	126.29	126.02	125.71	NR	125.53	1816.93	1817.20	1817.51	NR	1817.69
OU1	MW-9A	272193.736	2080628.145	1928.03	1925.40	101.3	116.3	1824.10	1809.10	111.60	111.42	110.96	NR	110.65	1816.43	1816.61	1817.07	NR	1817.38
OU2	MW-10A	272535.399	2081973.782	1923.48	1923.81	101.8	116.8	1822.01	1807.01	108.81	108.58	108.39	NR	108.20	1814.67	1814.90	1815.09	NR	1815.28
OU2	MW-10B	272530.51	2081982.385	1923.35	1923.70	120	125	1803.70	1798.70	110.37	109.95	110.00	NR	109.63	1812.98	1813.40	1813.35	NR	1813.72
OU2	MW-11A	271826.499	2083509.070	1911.84	1912.28	91	106	1821.28	1806.28	97.89	98.36	98.61	NR	97.55	1813.95	1813.48	1813.23	NR	1814.29
OU2	MW-12A	270399.71	2085390.335	1919.65	1917.13	102.4	117.4	1814.73	1799.73	113.18	112.99	112.82	NR	112.59	1806.47	1806.66	1806.83	NR	1807.06
OU2	MW-12C	270400.369	2085379.468	1919.64	1916.68	150	160	1766.68	1756.68	114.84	114.25	113.87	NR	113.96	1804.80	1805.39	1805.77	NR	1805.68
OU2	MW-12D	270399.729	2085403.614	1918.89	1916.98	167	177	1749.98	1739.98	114.06	113.44	112.09	NR	113.14	1804.83	1805.45	1806.80	NR	1805.75
OU1	MW-13C	270368.902	2081015.694	1929.65	1928.74	133	135.5	1795.74	1793.24	119.06	116.89	117.75	NR	118.58	1810.59	1812.76	1811.90	NR	1811.07
OU1	MW-13E	270393.318	2081014.304	1930.43	1928.89	230.8	235.8	1698.09	1693.09	118.35	117.53	117.62	NR	118.09	1812.08	1812.90	1812.81	NR	1812.34
OU2	MW-14A	270968.774	2084137.323	1911.69	1909.56	91	106	1818.56	1803.56	101.42	101.30	101.23	NR	101.08	1810.27	1810.39	1810.46	NR	1810.61
OU2	MW-16A	267054.564	2084286.931	1914.94	1915.45	100	115	1815.45	1800.45	109.86	108.91	108.22	NR	108.11	1805.08	1806.03	1806.72	NR	1806.83
OU2	MW-16C	267048.421	2084285.970	1915.08	1915.47	140.2	155.2	1775.27	1760.27	110.07	109.18	108.45	NR	108.83	1805.01	1805.90	1806.63	NR	1806.25
OU2	MW-17A	268796.556	2082958.916	1903.70	1901.85	84.5	104.5	1817.35	1797.35	95.38	94.55	93.89	NR	93.90	1808.32	1809.15	1809.81	NR	1809.80
OU2	MW-17C	268795.876	2082969.298	1902.91	1901.67	130	140	1771.67	1761.67	94.83	94.02	93.40	NR	93.73	1808.08	1808.89	1809.51	NR	1809.18
OU2	MW-17D	268796.267	2082964.251	1902.93	1901.73	190	192.5	1711.73	1709.23	94.82	93.96	93.39	NR	93.70	1808.11	1808.97	1809.54	NR	1809.23
OU2	MW-18A	268693.818	2085938.384	1912.89	1910.64	97	112	1813.64	1798.64	107.26	107.33	106.86	NR	106.69	1805.63	1805.56	1806.03	NR	1806.20
OU2	MW-18C	268683.36	2085938.592	1913.09	1910.53	135	140	1775.53	1770.53	110.89	109.31	108.64	NR	109.00	1802.20	1803.78	1804.45	NR	1804.09
OU2	MW-18D	268704.658	2085938.735	1913.32	1910.61	188	193	1722.61	1717.61	110.37	109.49	108.88	NR	109.19	1802.95	1803.83	1804.44	NR	1804.13
OU1	MW-19A	270955.133	2081332.850	1929.89	1927.81	127	132	1800.81	1795.81	117.05	116.49	116.23	NR	116.88	1812.14	1812.70	1813.66	NR	1813.01
OU1	MW-19C	270955.133	2081332.850	1929.89	1927.81	152	162	1775.81	1765.81	117.93	117.02	117.49	NR	117.89	1811.26	1812.18	1812.41	NR	1812.00
OU1	MW-20A	270597.445	2081202.233	1929.93	1927.97	127	132	1800.97	1795.97	118.39	116.64	117.37	NR	118.14	1810.82	1812.56	1812.56	NR	1811.79
OU1	MW-20C	270597.445	2081202.233	1929.93	1927.97	152	162	1775.97	1765.97	119.07	116.86	119.80	NR	121.01	1810.14	1812.35	1810.13	NR	1808.92
OU1	MW-20D	270597.445	2081202.233	1929.93	1927.97	182	192	1745.97	1735.97	118.03	116.58	117.42	NR	117.97	1811.18	1812.62	1812.51	NR	1811.96
OU1	MW-20E	270597.445	2081202.233	1929.93	1927.97	222	232	1705.97	1695.97	118.40	117.12	117.81	NR	118.38	1810.81	1812.09	1812.12	NR	1811.55
OU1	MW-30A	270271.723	2081095.430	1930.98	1929.03	127	132	1802.03	1797.03	119.20	118.13	118.04	NR	119.04	1811.08	1812.16	1812.95	NR	1811.94
OU1	MW-30C	270271.723	2081095.430	1930.98	1929.03	152	162	1777.03	1767.03	118.99	117.70	118.13	NR	118.90	1811.29	1812.58	1812.85	NR	1812.08
OU1	MW-30D	270271.723	2081095.430	1930.98	1929.03	182	192	1747.03	1737.03	119.15	117.87	118.32	NR	119.10	1811.13	1812.42	1812.66	NR	1811.88

Table 1
Monitoring Well Water Levels and Elevations
Garvey Elevator Site
Hastings, NE

Site	Well ID	State Plane Coordinates		Top of Casing Elevation	Ground Surface Elevation	Top of Screen	Bottom of Screen	Top of Screen Elevation	Bottom of Screen Elevation	Depth to Water (ft btoc)					Water Level Elevation (ft amsl)				
		Northing	Easting	(ft amsl)	(ft amsl)	(ft bgs)	(ft bgs)	(ft amsl)	(ft amsl)	Sep-10	Dec-10	Mar-11	Apr-11	Sep-11	Sep-10	Dec-10	Mar-11	Apr-11	Sep-11
OU1	MW-30E	270271.723	2081095.430	1930.98	1929.03	222	232	1707.03	1697.03	119.65	118.48	118.85	NR	119.83	1810.63	1811.81	1812.13	NR	1811.15
OU1	MW-31A	269550.764	2080816.035	1932.35	1930.08	127	132	1803.08	1798.08	119.71	118.53	118.37	NR	119.46	1811.92	1813.09	1813.97	NR	1812.89
OU1	MW-31C	269550.764	2080816.035	1932.35	1930.08	152	162	1778.08	1768.08	119.71	118.48	118.63	NR	119.24	1811.92	1813.14	1813.72	NR	1813.11
OU2	MW-41D1	266698.668	2089673.997	1917.19	1915.24	160	170	1755.24	1745.24	121.49	120.36	119.53	NR	120.22	1795.70	1796.83	1797.66	NR	1796.97
OU2	MW-41D2	266707.978	2089674.385	1916.96	1914.99	195	205	1719.99	1709.99	121.24	120.12	119.29	NR	119.94	1795.72	1796.84	1797.67	NR	1797.02
OU2	MW-42D	269167.917	2100135.441	1904.03	1902.07	174	184	1728.07	1718.07	123.16	121.72	120.85	NR	122.20	1780.87	1782.31	1783.18	NR	1781.83
OU2	MW-42E	269162.709	2100143.018	1904.13	1902.23	204	204	1698.23	1698.23	123.28	121.86	120.97	NR	122.31	1780.85	1782.27	1783.16	NR	1781.82
OU2	MW-43D	265395.165	2097605.559	1910.30	1908.35	180	190	1728.35	1718.35	128.10	126.49	125.56	NR	126.43	1782.20	1783.81	1784.74	NR	1783.87
OU2	MW-43E	265404.224	2097604.607	1910.34	1908.45	210	220	1698.45	1688.45	127.98	126.45	125.49	NR	126.48	1782.36	1783.89	1784.85	NR	1783.86
OU2	MW-44D	267552.024	2105258.206	1885.05	1885.30	183	193	1702.30	1692.30	111.71	110.58	109.74	NR	110.96	1773.34	1774.47	1775.31	NR	1774.09
OU2	MW-44E	267540.726	2105259.021	1885.05	1885.30	203	213	1682.30	1672.30	111.74	110.57	109.76	NR	110.98	1773.31	1774.48	1775.29	NR	1774.07
OU2	MW-45C	270056.013	2083476.694	1911.78	1909.82	137	147	1772.82	1762.82	103.88	103.17	102.86	NR	102.90	1807.90	1808.61	1808.92	NR	1808.88
OU2	MW-45D	270046.773	2083475.763	1911.38	1909.46	159	169	1750.46	1740.46	103.52	102.80	102.53	NR	102.54	1807.86	1808.58	1808.85	NR	1808.84
OU2	MW-46D1	269055.175	2089632.928	1912.85	1910.97	156	166	1754.97	1744.97	116.00	114.92	114.23	NR	114.89	1796.85	1797.93	1798.62	NR	1797.96
OU2	MW-46D2	269063.723	2089632.455	1913.03	1911.03	191	201	1720.03	1710.03	116.19	115.11	114.41	NR	115.11	1796.84	1797.92	1798.62	NR	1797.92
OU1	MW-47B	270779.709	2081046.275	1932.09		119.3	129.3	1810.39	1800.39	NA	119.59	119.03	118.80	118.93	NA	1812.50	1813.06	1813.29	1813.16
OU1	MW-47C	270779.81	2081045.917	1932.09	1929.95	139	149	1790.80	1780.80	NA	121.27	NR	118.67	121.62	NA	1810.82	NR	1813.42	1810.47
OU1	MW-47D	270779.646	2081046.033	1932.10		160	170	1769.57	1759.57	NA	119.03	NR	118.60	118.45	NA	1813.07	NR	1813.50	1813.65
OU1	MW-48B	270038.231	2080890.346	1931.05		117.32	127.32	1811.75	1801.75	NA	119.04	118.57	117.95	118.85	NA	1812.01	1812.48	1813.10	1812.20
OU1	MW-48C	270037.873	2080890.299	1931.03	1928.87	139.8	149.8	1788.74	1778.74	NA	118.83	NR	117.54	118.53	NA	1812.20	NR	1813.49	1812.50
OU1	MW-48D	270038.325	2080890.203	1931.05		160	170	1768.74	1758.74	NA	118.00	NR	117.52	117.82	NA	1813.05	NR	1813.53	1813.23
OU1	MW-49B	270644.176	2080860.098	1931.46		118.1	128.1	1810.95	1800.95	NA	120.80	120.31	118.53	119.19	NA	1810.66	1811.15	1812.93	1812.27
OU1	MW-49C	270643.931	2080860.262	1931.47	1929.34	139	149	1790.06	1780.06	NA	119.15	119.11	117.65	119.12	NA	1812.32	1812.36	1813.82	1812.35
OU1	MW-49D	270643.943	2080859.976	1931.46		160.6	170.6	1768.48	1758.48	NA	118.13	118.41	117.63	118.06	NA	1813.33	1813.05	1813.83	1813.40
OU1	MW-50B	270485.861	2080900.112	1931.51		116.9	126.9	1812.11	1802.11	NA	118.93	118.48	118.34	118.37	NA	1812.58	1813.03	1813.17	1813.14
OU1	MW-50C	270485.898	2080899.742	1931.54	1929.25	136.8	146.8	1791.66	1781.66	NA	119.97	119.70	117.93	119.64	NA	1811.57	1811.84	1813.61	1811.90
OU1	MW-50D	270486.057	2080899.932	1931.46		158.1	168.1	1771.12	1761.12	NA	118.38	118.49	117.79	118.23	NA	1813.08	1812.97	1813.67	1813.23
OU1	MW-51B	270305.947	2080987.446	1931.60		116.5	126.5	1812.88	1802.88	NA	119.43	119.04	118.61	119.24	NA	1812.17	1812.56	1812.99	1812.36
OU1	MW-51C	270305.696	2080987.514	1931.62	1929.43	139.5	149.5	1789.97	1779.97	NA	120.21	NR	118.26	119.85	NA	1811.41	NR	1813.36	1811.77
OU1	MW-51D	270305.888	2080987.639	1931.62		160	170	1769.27	1759.27	NA	118.75	NR	118.19	118.60	NA	1812.87	NR	1813.43	1813.02
Hwy 6	MW-104A	271921.238	2088225.729	1908.57	1908.98	100	115	1808.57	1793.57	105.34	104.85	104.41	NR	104.71	1803.23	1803.72	1804.16	NR	1803.86
Hwy 6	MW-104C	271929.471	2088225.413	1908.56	1908.92	160	180	1748.56	1728.56	107.97	107.39	106.90	NR	107.21	1800.59	1801.17	1801.66	NR	1801.35
Hwy 6	MW-104D	271937.379	2088225.393	1908.48	1909.01	192	212	1716.48	1696.48	107.88	107.31	106.83	NR	107.11	1800.60	1801.17	1801.65	NR	1801.37
Hwy 6	MW-105A	270085.306	2089866.113	1919.31	1916.62	108	123	1811.31	1796.31	120.32	119.73	119.14	NR	119.37	1798.99	1799.58	1800.17	NR	1799.94
Hwy 6	MW-105C	270077.035	2089866.331	1919.36	1916.83	159.5	179.5	1759.86	1739.86	122.44	121.48	120.81	NR	121.45	1796.92	1797.88	1798.55	NR	1797.91
Hwy 6	MW-105D	270069.428	2089866.388	1919.22	1916.79	192	212	1727.22	1707.22	122.27	121.30	120.65	NR	121.28	1796.95	1797.92	1798.57	NR	1797.94
Hwy 6	MW-106A	270461.463	2098152.600	1909.22	1906.85	114	129	1795.22	1780.22	121.24	120.68	119.94	NR	120.65	1787.98	1788.54	1789.28	NR	1788.57
Hwy 6	MW-106C	270456.847	2098159.989	1909.22	1906.74	161	181	1748.22	1728.22	124.86	123.50	122.59	NR	123.91	1784.36	1785.72	1786.63	NR	1785.31
Hwy 6	MW-106D	270452.369	2098166.199	1909.20	1906.64	192	212	1717.20	1697.20	124.90	123.52	122.63	NR	123.93	1784.30	1785.68	1786.57	NR	1785.27

Notes:

For Waterloo multilevel wells (MW-19A/C, MW-20A/C/D/E, MW-30A/C/D/E, and MW-31A/C) the "Top of Casing Elevation" shown on the table is the top of casing elevation that was measured at the top of the Waterloo system manifold minus 8.5 inches [0.708 ft], which is the distance between the top of the manifold to the outer 4-inch PVC casing.

Hwy 6 wells installed for the West Highway 6 & Highway 281 Site.

amsl - above mean seal level

bgs - below ground surface

btoc - below top of casing

ft - feet

NA - not applicable

NR - not recorded

OU1 - Operable Unit 1; these wells are associated with on-site groundwater

OU2 - Operable Unit 2; these wells are associated with off-site groundwater

Table 2
Summary of Analytical Results for OU1
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-1A	09/26/2010	5068-31	1.0 U	1.0 U	1.0 U
	12/15/2010	5188-9	0.50 U	0.50 U	0.50 U
	03/25/2011	5282-20	0.5 U	0.5 U	0.5 U
	09/28/2011	5511-14	1.0 U	1.0 U	1.0 U
MW-2A	09/25/2010	5068-27	1.0 U	1.0 U	1.0 U
	12/15/2010	5188-12	0.50 U	0.50 U	0.50 U
	03/25/2011	5282-19	0.5 U	0.5 U	0.5 U
	10/01/2011	5511-34	1.0 UJ	1.0 U	1.0 U
MW-3A	09/23/2010	5068-12	**3.9**	1.0 U	1.0 U
	12/18/2010	5188-29	**1.6**	0.50 U	0.50 U
	03/27/2011	5282-32	**1.1**	0.5 U	0.5 U
	09/30/2011	5511-27	1.0 UJ	1.0 U	1.0 U
MW-3B	09/23/2010	5068-10	**180**	1.0 UJ	1.0 U
		5068-10-FD	**180**	1.0 UJ	1.0 U
	12/18/2010	5188-28	**350**	**1.1**	1.0 U
	03/27/2011	5282-31	**630**	2 U	0.5 U
	09/30/2011	5511-24	**53**	1.0 U	1.0 U
MW-3D	09/23/2010	5068-13	1.0 U	1.0 U	1.0 U
	12/18/2010	5188-30	0.50 U	0.50 U	0.50 U
	03/27/2011	5282-34	0.5 U	0.5 U	0.5 U
	09/30/2011	5511-29	1.0 UJ	1.0 U	1.0 U
MW-3E	09/23/2010	5068-9	1.0 U	1.0 UJ	1.0 U
	12/18/2010	5188-27	0.50 U	0.50 U	0.50 U
	03/27/2011	5282-33	0.5 U	0.5 U	0.5 U
	09/30/2011	5511-28	1.0 UJ	1.0 U	1.0 U
MW-4A	09/26/2010	5068-30	**4.3**	1.0 U	1.0 U
	12/19/2010	5188-35	**6.8**	**0.62**	0.50 U
	03/27/2011	5282-38	**12**	0.5 U	0.5 U
	10/02/2011	5511-55	**21**	1.0 U	1.0 U
MW-4B	09/26/2010	5068-29	**940**	**1.3**	1.0 U
	12/19/2010	5188-33	**1300**	3.8 U	3.9 U
		5188-33-FD	**1300**	3.8 U	3.9 U
	03/27/2011	5282-36	**1400**	**3.7**	0.5 U
		5282-36-FD	**1400**	**3.7**	0.5 U
	10/02/2011	5511-38	**640**	**1.3**	1.0 U
		5511-38-FD	**630**	**1.3**	1.0 U

Table 2
Summary of Analytical Results for OU1
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-5A	09/24/2010	5068-16	**9.8**	1.0 U	1.0 U
	12/17/2010	5188-23	**11**	0.50 U	0.50 U
	03/25/2011	5282-21	**6.6**	0.5 U	0.5 U
	10/01/2011	5511-32	**4.1 J**	1.0 U	1.0 U
MW-5B	09/23/2010	5068-14	**12**	1.0 U	1.0 U
		5068-14-FD	**13**	1.0 U	1.0 U
	12/17/2010	5188-21	**33**	0.50 U	0.50 U
		5188-21-FD	**30**	0.50 U	0.50 U
	03/25/2011	5282-22	**100**	0.63 U	0.5 U
		5282-22-FD	**110**	0.68 U	0.5 U
	10/01/2011	5511-31	**19 J**	1.0 U	1.0 U
MW-5D	09/24/2010	5068-17	1.0 U	1.0 U	1.0 U
	12/17/2010	5188-20	0.50 U	0.50 U	0.50 U
	03/25/2011	5282-24	0.5 U	0.5 U	0.5 U
	10/01/2011	5511-33	1.0 UJ	1.0 U	1.0 U
MW-6A	09/24/2010	5068-20	**41**	1.0 U	1.0 U
		5068-20-FD	**42**	1.0 U	1.0 U
	12/17/2010	5188-26	**19**	0.50 U	0.50 U
	03/26/2011	5282-29	**8.4**	0.5 U	0.5 U
	09/28/2011	5511-17	**9.8**	1.0 U	1.0 U
MW-6D	09/24/2010	5068-19	1.0 U	1.0 U	1.0 U
	12/17/2010	5188-25	0.50 U	0.50 U	0.50 U
	03/26/2011	5282-28	0.5 U	0.5 U	0.5 U
	09/29/2011	5511-16	1.0 U	1.0 U	1.0 U
MW-6E	09/24/2010	5068-18	1.0 U	1.0 U	1.0 U
	12/17/2010	5188-24	0.50 U	0.50 U	0.50 U
	03/26/2011	5282-30	0.5 U	0.5 U	0.5 U
	09/29/2011	5511-18	1.0 U	1.0 U	1.0 U
MW-7A	09/24/2010	5068-23	1.0 U	1.0 U	1.0 U
	12/16/2010	5188-14	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-16	0.5 U	0.5 U	0.5 U
	09/29/2011	5511-19	1.0 U	1.0 U	1.0 U
MW-7B	09/24/2010	5068-22	1.0 U	1.0 U	1.0 U
	12/16/2010	5188-13	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-15	0.5 U	0.5 U	0.5 U
	09/29/2011	5511-20	1.0 U	1.0 U	1.0 U

Table 2
Summary of Analytical Results for OU1
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-8A	09/25/2010	5068-28	1.0 U	1.0 U	1.0 U
	12/15/2010	5188-11	0.50 U	**1.2**	0.50 U
	03/25/2011	5282-18	0.5 U	**0.81**	0.5 U
	09/30/2011	5511-30	1.0 U	1.0 U	1.0 U
MW-9A	09/22/2010	5068-1	1.0 U	1.0 UJ	1.0 U
	12/15/2010	5188-10	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-17	0.5 U	0.5 U	0.5 U
	09/28/2011	5511-15	1.0 U	1.0 U	1.0 U
MW-13C	09/25/2010	5068-26	**220**	**1.1**	1.0 U
	12/19/2010	5188-37	**160**	**0.94 J**	0.50 U
		5188-37-FD	**150**	**0.85**	0.50 U
	03/26/2011	5282-26	**240**	1.6 U	0.5 U
		5282-26-FD	**220**	1.7 U	0.5 U
	09/29/2011	5511-22	**130**	1.0 U	1.0 U
		5511-22-FD	**130**	1.0 U	1.0 U
MW-13E	09/25/2010	5068-24	1.0 U	1.0 U	1.0 U
	12/19/2010	5188-36	0.50 U	0.50 U	0.50 U
	03/26/2011	5282-25	0.5 U	0.5 U	0.5 U
	09/29/2011	5511-21	1.0 UJ	1.0 UJ	1.0 UJ
MW-19A	09/27/2010	5068-37	**65**	**2.2**	**4.2**
	12/16/2010	5188-19	**58**	**2.5**	**4.2**
	03/23/2011	5282-9	**77**	**4.2**	**6.7**
	09/28/2011	5511-13	**70 J**	**4.1**	**6.2**
MW-19C	09/27/2010	5068-35	1.0 U	1.0 U	1.0 U
	12/14/2010	5188-7	**0.94**	0.50 U	0.50 U
	03/23/2011	5282-8	0.5 U	0.5 U	0.5 U
	09/28/2011	5511-12	1.0 U	1.0 U	1.0 U
MW-20A	09/27/2010	5068-36	**1**	**1.6**	1.0 U
	12/16/2010	5188-18	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-14	**0.84**	1 U	0.5 U
	09/28/2011	5511-11	**1.0**	**1.2**	1.0 U
MW-20C	09/26/2010	5068-34	1.0 U	1.0 U	1.0 U
	12/16/2010	5188-15	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-12	0.5 U	0.5 U	0.5 U
		5282-12-FD	0.5 U	0.5 U	0.5 U
	09/28/2011	5511-10	1.0 U	1.0 U	1.0 U

Table 2
Summary of Analytical Results for OU1
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-20D	09/26/2010	5068-33	1.0 U	1.0 U	1.0 U
	12/16/2010	5188-16	0.50 U	0.50 U	0.50 U
		5188-16-FD	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-11	0.5 U	0.5 U	0.5 U
	09/28/2011	5511-9	1.0 U	1.0 U	1.0 U
MW-20E	09/26/2010	5068-32	1.0 U	1.0 U	1.0 U
	12/15/2010	5188-8	0.50 U	0.50 U	0.50 U
	03/24/2011	5282-10	0.5 U	0.5 U	0.5 U
	09/28/2011	5511-8	1.0 U	1.0 U	1.0 U
MW-30A	09/22/2010	5068-7	**290**	**8.4 J**	1.0 U
		5068-7-FD	**280**	**9.5 J**	1.0 U
	12/14/2010	5188-6	**390**	**5.8**	1.3 U
	03/23/2011	5282-6	**520**	**7.9**	0.5 U
	09/27/2011	5511-7	**160 J**	**4.4**	1.0 U
MW-30C	09/22/2010	5068-6	1.0 U	**1.1 J**	1.0 U
	12/14/2010	5188-5	0.50 U	**1.4**	0.50 U
	03/23/2011	5282-5	0.5 U	**1.1**	0.5 U
	09/27/2011	5511-5	1.0 U	1.0 U	1.0 U
		5511-5-FD	1.0 U	1.0 U	1.0 U
MW-30D	09/22/2010	5068-5	1.0 U	**10 J**	1.0 U
	12/14/2010	5188-4	0.50 U	**5.8**	0.50 U
	03/23/2011	5282-4	0.5 U	**4.2**	0.5 U
	09/27/2011	5511-4	1.0 U	**3.4**	1.0 U
MW-30E	09/22/2010	5068-4	1.0 U	**4.0 J**	1.0 U
	12/14/2010	5188-3	0.50 U	**3.6**	0.50 U
	03/23/2011	5282-3	0.5 U	**1.7**	0.5 U
	09/27/2011	5511-3	1.0 UJ	**1.8 J**	1.0 U
MW-31A	09/22/2010	5068-3	**12**	**20 J**	1.0 U
	12/14/2010	5188-2	**16**	**22**	0.50 U
	03/23/2011	5282-2	**3.3**	**15**	0.5 U
	09/27/2011	5511-2	**7.5**	**16**	1.0 U
MW-31C	09/22/2010	5068-2	1.0 U	1.0 UJ	1.0 U
	12/14/2010	5188-1	0.50 U	0.50 U	0.50 U
	03/23/2011	5282-1	0.5 U	0.5 U	0.5 U
	09/27/2011	5511-1	1.0 U	1.0 U	1.0 UJ

Table 2
Summary of Analytical Results for OU1
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-47B	10/03/2011	5511-43	**59**	**4.6**	**1.4**
MW-47C	10/03/2011	5511-44	**6.2**	1.0 U	1.0 U
MW-47D	10/03/2011	5511-46	1.0 U	1.0 U	1.0 U
MW-48B	10/02/2011	5511-59	**680**	**2.2**	1.0 U
MW-48C	10/02/2011	5511-57	1.0 U	1.0 U	1.0 U
MW-48C		5511-57-FD	1.0 U	1.0 U	1.0 U
MW-48D	10/03/2011	5511-49	1.0 U	1.0 U	1.0 U
MW-49B	10/01/2011	5511-35	**43**	1.0 U	1.0 U
MW-49C	10/01/2011	5511-36	1.0 UJ	1.0 U	1.0 U
MW-49D	10/01/2011	5511-37	1.0 UJ	1.0 U	1.0 U
MW-50B	10/02/2011	5511-42	**8.4**	1.0 U	1.0 U
MW-50C	10/02/2011	5511-40	1.0 U	1.0 U	1.0 U
MW-50C		5511-40-FD	1.0 U	1.0 U	1.0 U
MW-50D	10/02/2011	5511-45	1.0 U	1.0 U	1.0 U
MW-51B	10/02/2011	5511-60	**1200**	**15**	1.0 U
MW-51C	10/03/2011	5511-47	1.0 U	1.0 U	1.0 U
MW-51D	10/03/2011	5511-48	1.0 U	1.0 U	1.0 U

Notes:

Bolded results indicate a detection.

Shaded results indicate that the reported result is greater than the PRG.

All results reported in µg/L.

ID - identification

J - the reported value is an estimate.

µg/L - micrograms per liter

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.

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Table 3
Summary of Analytical Results for OU2
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-10A	09/27/2010	5067-36	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-42	**0.54**	0.50 U	0.50 U
	03/27/2011	5281-36	**1**	1.0 U	1.0 U
	10/01/2011	5512-40	1.0 U	1.0 U	1.0 U
	10/01/2011	5512-41	1.0 U	1.0 U	1.0 U
MW-10B	09/27/2010	5067-35	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-41	0.50 U	0.50 U	0.50 U
	03/27/2011	5281-35	1.0 U	1.0 U	1.0 U
	10/01/2011	5512-39	1.0 U	1.0 U	1.0 U
MW-11A	09/25/2010	5067-26	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-35	0.50 U	0.50 U	0.50 U
	03/25/2011	5281-22	1.0 U	1.0 U	1.0 U
MW-12A	09/23/2010	5067-10	0.50 U	0.50 U	0.50 U
	12/17/2010	5187-20	0.50 U	0.50 U	0.50 U
	03/27/2011	5281-38	1.0 U	1.0 U	1.0 U
	09/30/2011	5512-27	1.0 U	1.0 U	1.0 U
MW-12C	09/23/2010	5067-9	**11**	0.50 U	0.50 U
	12/17/2010	5187-18	**20**	0.50 U	0.50 U
		5187-18-FD	**23**	0.50 U	0.50 U
	03/27/2011	5281-37	**18**	1.0 U	1.0 U
	09/30/2011	5512-28	**8.9 J**	1.0 U	1.0 U
		5512-28-FD	**9.0 J**	1.0 U	1.0 U
MW-12D	09/23/2010	5067-11	**0.85**	0.50 U	0.50 U
		5067-11-FD	**0.92**	0.50 U	0.50 U
	12/17/2010	5187-21	**1.4**	0.50 U	0.50 U
	03/27/2011	5281-39	1.0 U	1.0 U	1.0 U
	09/30/2011	5512-26	1.0 U	1.0 U	1.0 U
MW-14A	09/27/2010	5067-42	0.50 U	0.50 U	0.50 U
	12/18/2010	5187-28	0.50 U	0.50 U	0.50 U
	03/26/2011	5281-30	1.0 U	1.0 U	1.0 U
	10/01/2011	5512-38	1.0 U	1.0 U	1.0 U
MW-16A	09/27/2010	5067-38	0.50 U	0.50 U	0.50 U
	12/20/2010	5187-37	0.50 U	0.50 U	0.50 U
	03/24/2011	5281-11	1.0 U	1.0 U	1.0 U
	09/30/2011	5512-30	1.0 U	1.0 U	1.0 U

Table 3
Summary of Analytical Results for OU2
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-16C	09/27/2010	5067-37	0.50 U	0.50 U	0.50 U
	12/20/2010	5187-36	0.50 U	0.50 U	0.50 U
	03/24/2011	5281-12	1.0 U	1.0 U	1.0 U
		5281-12-FD	1.0 U	1.0 U	1.0 U
	09/30/2011	5512-31	1.0 U	1.0 U	1.0 U
MW-17A	09/22/2010	5067-5	0.50 U	0.50 U	0.50 U
	12/15/2010	5187-5	**0.85**	0.50 U	0.50 U
	03/23/2011	5281-3	1.0 U	1.0 U	1.0 U
	09/30/2011	5512-32	1.0 U	1.0 U	1.0 U
MW-17C	09/22/2010	5067-4	**25**	0.50 U	0.50 U
	12/15/2010	5187-7	**37**	0.50 U	0.50 U
	03/23/2011	5281-1	69	1.0 U	1.0 U
	09/30/2011	5512-33	1.0 U	1.0 U	1.0 U
MW-17D	09/22/2010	5067-1	0.50 U	0.50 U	0.50 U
	12/15/2010	5187-6	0.50 U	0.50 U	0.50 U
	03/23/2011	5281-2	1.0 U	1.0 U	1.0 U
	09/30/2011	5512-34	**94 J**	1.0 U	1.0 U
MW-18A	09/22/2010	5067-7	0.50 U	0.50 U	0.50 U
	12/15/2010	5187-9	0.50 U	0.50 U	0.50 U
	03/24/2011	5281-15	1.0 U	1.0 U	1.0 U
	09/27/2011	5512-2	1.0 U	1.0 U	1.0 U
MW-18C	09/22/2010	5067-8	**3.5**	**0.66**	0.50 U
	12/15/2010	5187-10	**9.7**	0.50 U	0.50 U
	03/24/2011	5281-16	**15**	1.0 U	1.0 U
	09/27/2011	5512-3	**8.1 J**	1.0 U	1.0 U
MW-18D	09/22/2010	5067-6	**9**	0.50 U	0.50 U
	12/15/2010	5187-8	**23**	0.50 U	0.50 U
	03/24/2011	5281-14	**46**	1.0 U	1.0 U
	09/27/2011	5512-1	**21 J**	1.0 U	1.0 U
MW-41-D1	09/26/2010	5067-29	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-33	0.50 U	0.50 U	0.50 U
	03/23/2011	5281-7	1.0 U	1.0 U	1.0 U
	09/28/2011	5512-9	1.0 U	1.0 U	1.0 U
MW-41-D2	09/26/2010	5067-30	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-34	**1.2**	0.50 U	0.50 U
	03/23/2011	5281-6	**2.2**	1.0 U	1.0 U
	09/28/2011	5512-8	**1.0 J**	1.0 U	1.0 U

Table 3
Summary of Analytical Results for OU2
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-42D	09/24/2010	5067-17	**10**	0.50 U	0.50 U
	12/14/2010	5187-3	**15 J**	0.50 U	0.50 U
	03/26/2011	5281-27	**29**	1.0 U	1.0 U
	09/29/2011	5512-17	**42 J**	1.0 U	1.0 U
		5512-17-FD	**42 J**	1.0 U	1.0 U
MW-42E	09/24/2010	5067-16	**34**	0.50 U	0.50 U
	12/14/2010	5187-4	**50**	0.50 U	0.50 U
	03/26/2011	5281-28	**58**	1.0 U	1.0 U
		5281-28-FD	**69**	1.0 U	1.0 U
	09/29/2011	5512-16	**74 J**	1.0 U	1.0 U
MW-43D	09/24/2010	5067-19	0.50 U	0.50 U	0.50 U
	12/20/2010	5187-39	0.50 U	0.50 U	0.50 U
	09/28/2011	5512-7	1.0 U	1.0 U	1.0 U
MW-43E	09/24/2010	5067-18	0.50 U	0.50 U	0.50 U
	12/20/2010	5187-38	**1.0**	0.50 U	0.50 U
	03/25/2011	5281-21	**1.4**	1.0 U	1.0 U
	09/28/2011	5512-6	**1.8 J**	1.0 U	1.0 U
MW-44D	09/26/2010	5067-27	**4.6**	0.50 U	0.50 U
	12/14/2010	5187-1	**13**	0.50 U	0.50 U
	03/25/2011	5281-17	**18**	1.0 U	1.0 U
	03/25/2011	5281-20	1.0 U	1.0 U	1.0 U
	09/27/2011	5512-5	**19 J**	1.0 U	1.0 U
MW-44E	09/26/2010	5067-28	0.50 U	0.50 U	0.50 U
	12/14/2010	5187-2	0.50 U	0.50 U	0.50 U
	03/25/2011	5281-18	1.0 U	1.0 U	1.0 U
	09/27/2011	5512-4	1.0 U	1.0 U	1.0 U
MW-45C	09/27/2010	5067-39	0.50 U	0.50 U	0.50 U
		5067-39-FD	0.50 U	0.50 U	0.50 U
	12/16/2010	5187-14	0.50 U	0.50 U	0.50 U
		5187-14-FD	0.50 U	0.50 U	0.50 U
	03/27/2011	5281-40	1.0 U	1.0 U	1.0 U
		5281-40-FD	1.0 U	1.0 U	1.0 U
	09/29/2011	5512-24	1.0 U	1.0 U	1.0 U
		5512-24-FD	1.0 U	1.0 U	1.0 U
MW-45D	09/27/2010	5067-41	0.50 U	0.50 U	0.50 U
	12/16/2010	5187-16	0.50 U	0.50 U	0.50 U
	03/27/2011	5281-42	1.0 U	1.0 U	1.0 U
	09/29/2011	5512-23	1.0 U	1.0 U	1.0 U

Table 3
Summary of Analytical Results for OU2
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-46-D1	09/25/2010	5067-22	**110**	**4**	0.50 U
	12/18/2010	5187-27	**470**	**5.9**	1.5 U
	03/23/2011	5281-5	**530**	**3.8**	1.0 U
	09/28/2011	5512-15	**770 J**	**2.9**	1.0 U
MW-46-D2	09/24/2010	5067-20	**65**	0.50 U	0.50 U
		5067-20-FD	**59**	0.50 U	0.50 U
	12/18/2010	5187-26	**150**	**1**	0.50 U
	03/23/2011	5281-4	**170**	**1.1**	1.0 U
	09/28/2011	5512-14	**320 J**	**1.2**	1.0 U
MW-104A	09/23/2010	5067-15	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-32	0.50 U	0.50 U	0.50 U
	03/24/2011	5281-10	1.0 U	1.0 U	1.0 U
	10/01/2011	5512-35	1.0 U	1.0 U	1.0 U
MW-104C	09/23/2010	5067-14	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-30	0.50 U	0.50 U	0.50 U
		5187-30-FD	0.50 U	0.50 U	0.50 U
	03/24/2011	5281-9	1.0 U	1.0 U	1.0 U
	10/01/2011	5512-36	1.0 U	1.0 U	1.0 U
MW-104D	09/23/2010	5067-13	0.50 U	0.50 U	0.50 U
	12/19/2010	5187-29	0.50 U	0.50 U	0.50 U
	03/24/2011	5281-8	1.0 U	1.0 U	1.0 U
	10/01/2011	5512-37	1.0 U	1.0 U	1.0 U
MW-105A	09/27/2010	5067-34	0.50 U	0.50 U	0.50 U
	12/18/2010	5187-25	0.50 U	0.50 U	0.50 U
	03/27/2011	5281-33	1.0 U	1.0 U	1.0 U
	09/28/2011	5512-13	1.0 U	1.0 U	1.0 U
MW-105C	09/26/2010	5067-32	**86**	**0.7**	0.50 U
		5067-32-FD	**90**	**0.81**	0.50 U
	12/17/2010	5187-24	**170**	**1.7**	0.50 U
	03/27/2011	5281-34	**190**	**1.8**	1.0 U
	09/28/2011	5512-12	**200 J**	**1.2**	1.0 U
MW-105D	09/26/2010	5067-31	0.50 U	0.50 U	0.50 U
	12/17/2010	5187-22	**17**	0.50 U	0.50 U
		5187-22-FD	**16**	0.50 U	0.50 U
	03/27/2011	5281-31	**49**	1.0 U	1.0 U
		5281-31-FD	**42**	1.0 U	1.0 U
	09/28/2011	5512-10	**52 J**	1.0 U	1.0 U
		5512-10-FD	**51 J**	1.0 U	1.0 U

Table 3
Summary of Analytical Results for OU2
Garvey Elevator Site
Hastings, NE

Sample Location	Sample Collection Date	EPA Lab ID	Carbon Tetrachloride PRG=5 µg/L	Chloroform PRG=80 µg/L	TCE PRG=5 µg/L
MW-106A	09/25/2010	5067-25	0.50 U	0.50 U	0.50 U
	12/16/2010	5187-11	0.50 U	0.50 U	0.50 U
	03/26/2011	5281-24	1.0 U	1.0 U	1.0 U
	09/29/2011	5512-19	1.0 U	1.0 U	1.0 U
MW-106C	09/25/2010	5067-24	0.50 U	0.50 U	0.50 U
	12/16/2010	5187-13	0.50 U	0.50 U	0.50 U
	03/26/2011	5281-25	1.0 U	1.0 U	1.0 U
	09/29/2011	5512-20	1.0 U	1.0 U	1.0 U
MW-106D	09/25/2010	5067-23	0.50 U	0.50 U	0.50 U
	12/16/2010	5187-12	0.50 U	0.50 U	0.50 U
	03/26/2011	5281-26	1.0 U	1.0 U	1.0 U
	09/29/2011	5512-21	1.0 U	1.0 U	1.0 U
Rolls Old Well	12/18/2010	5188-31	**36**	0.50 U	0.50 U
	03/28/2011	5281-44	**52**	1.0 U	1.0 U
	09/30/2011	5511-25	**13 J**	1.0 U	1.0 U
Rolls New Well	12/18/2010	5188-32	0.50 U	0.50 U	0.50 U
	03/28/2011	5281-45	1.0 U	1.0 U	1.0 U
	09/30/2011	5511-26	1.0 UJ	1.0 U	1.0 U

Notes:

Bolded results indicate a detection.

Shaded results indicate that the reported result is greater than the PRG.

All results reported in µg/L.

ID - identification

J - the reported value is an estimate.

µg/L - micrograms per liter

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.

ATTACHMENT 2

FIGURES

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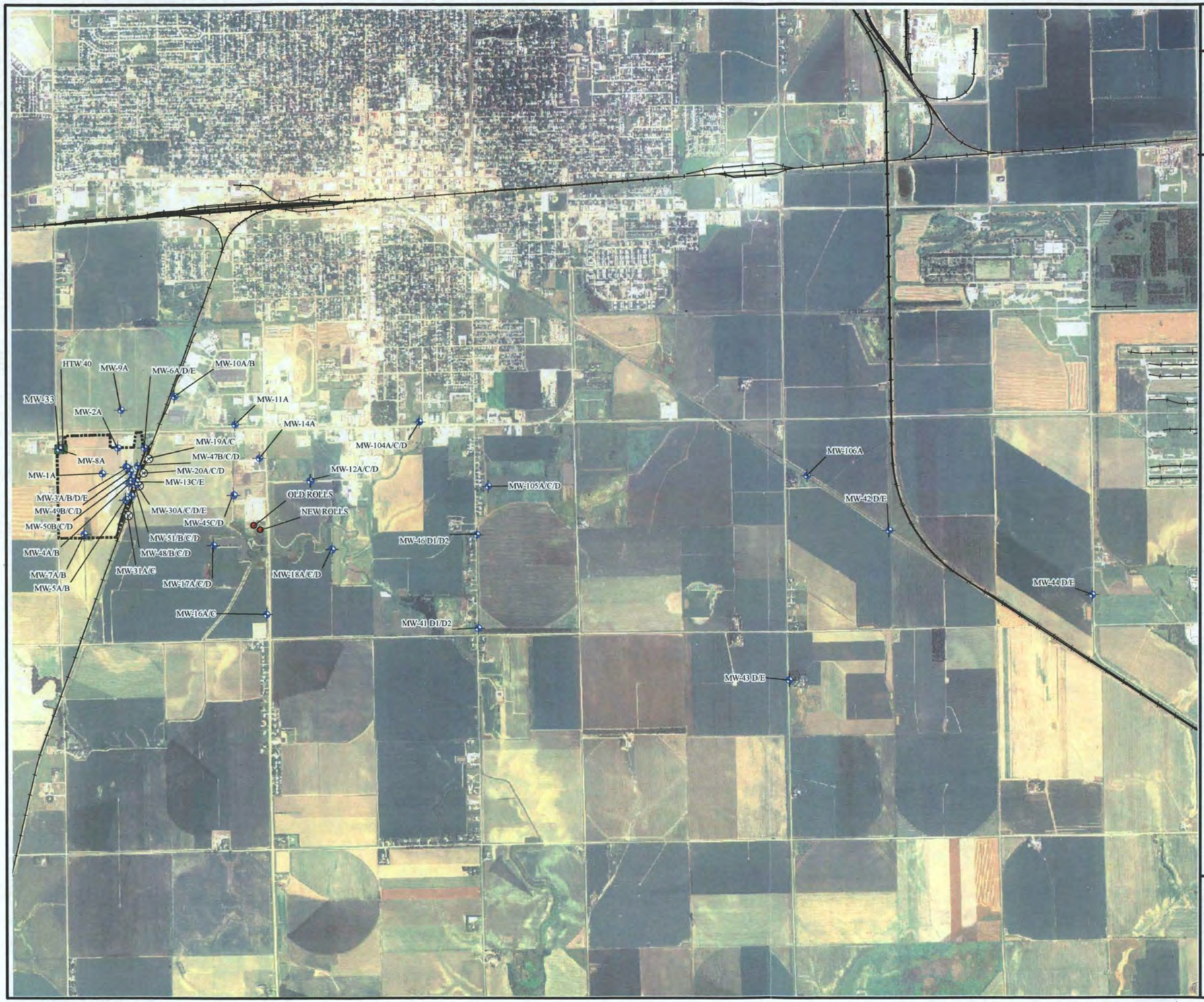
Project: EP9046.02.40.06.00.00
Revised: 12/29/11 ST
Source: ESRI StreetMap USA
Nebraska DNR

HGL HydroGeoLogic, Inc

Figure 1
Site Location Map
Garvey Elevator
Superfund Site
Hastings, NE

Figure 2
Monitoring Well Location Map



Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well Location
- Multilevel Well
- Hydraulic Test Well
- Domestic / Irrigation Water Wells

N

0 2,500 5,000
Feet

Filename: X:/EPA009/Garvey/Semi_GW_Sampling/
RI_Monitoring_Well_Loc_Map.mxd
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

HGL
HydroGeoLogic, Inc

HGL—Semiannual Groundwater Sampling Report, Garvey Elevator Site—Hastings, NE

Figure 3
Potentiometric Surface - Zone A/B
September 2011

Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well
- Multilevel Well
- Hydraulic Conductivity Well
- 1788 — Groundwater Contour (feet above mean sea level)
- General Groundwater Flow Direction

0 2,500 5,000
Feet

N

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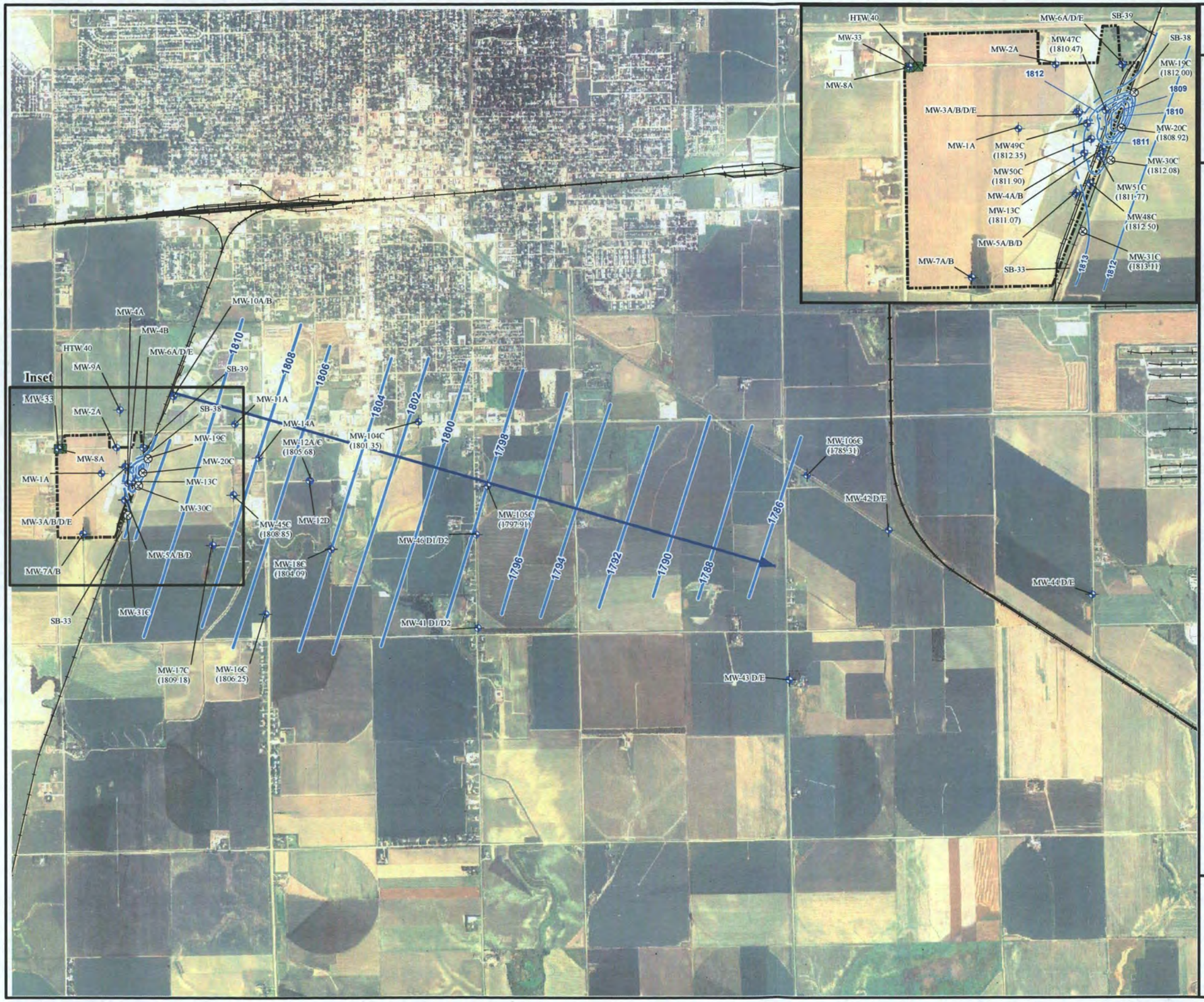
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

Figure 4
Potentiometric Surface - Zone C
September 2011



Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well
- Multilevel Well
- Hydraulic Conductivity Well
- 1788 — Groundwater Contour (feet above mean sea level)
- General Groundwater Flow Direction

Filename: X:/EPA009/Garvey/Semi_GW_Sampling/Medial_Aquifer_Pot_Surface_Map.mxd
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

Figure 5
Potentiometric Surface - Zone D/E
September 2011

Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well
- Multilevel Well
- Hydraulic Conductivity Well
- 1788 — Groundwater Contour (feet above mean sea level)
- General Groundwater Flow Direction

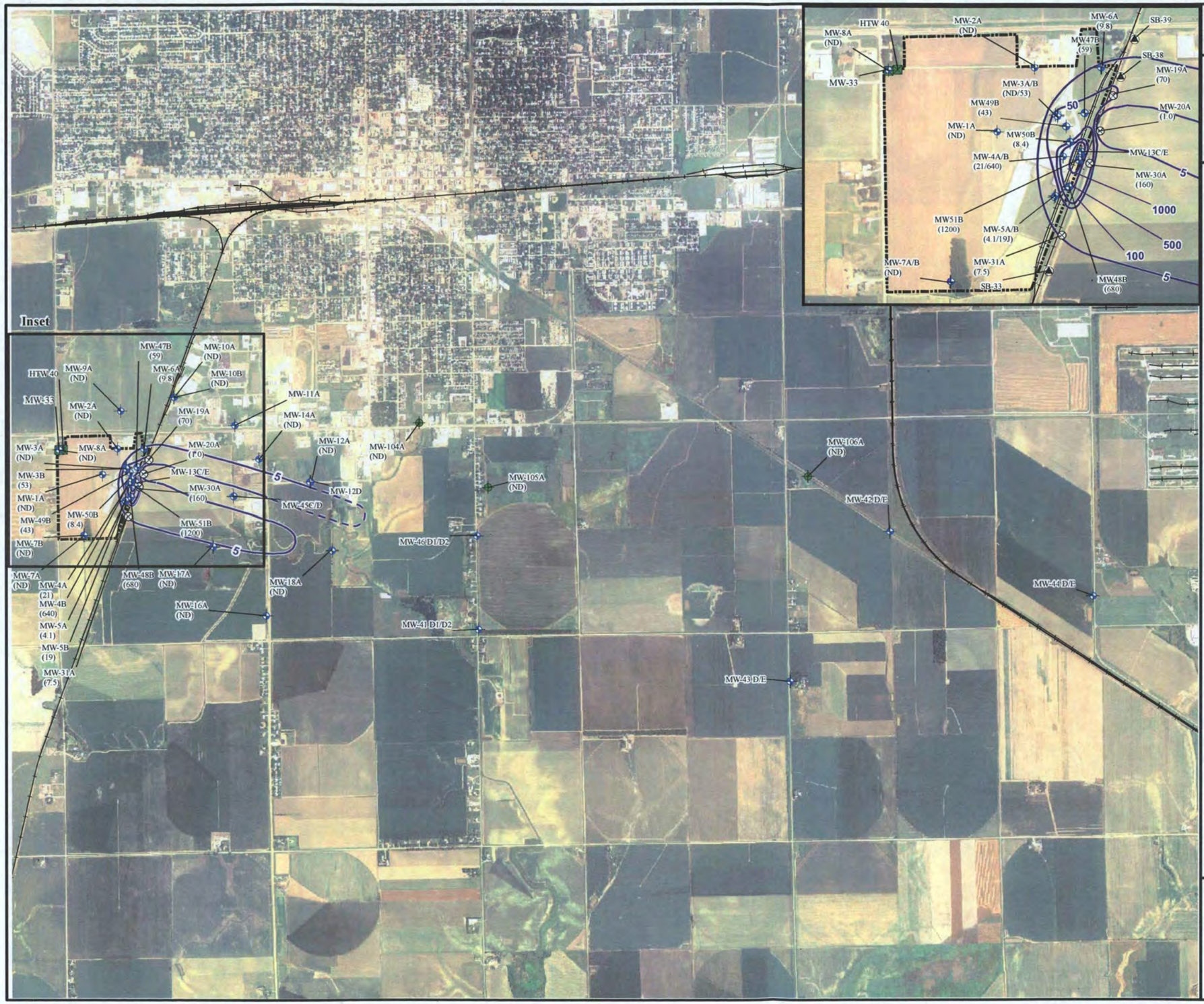
0 2,500 5,000
Feet

N

Filename: X:/EPA009/Garvey/Semi_GW_Sampling/Medial_Aquifer_Pot_Surface_Map.mxd
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

HGL HydroGeoLogic, Inc

Figure 6
Carbon Tetrachloride in the Upper Aquifer Zone A/B September 2011 Sampling



Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well Location
- ⊗ Multilevel Well
- Hydraulic Conductivity
- West Highway 6 & Highway 281 Site Monitoring Well
- (190) Carbon Tetrachloride Concentration in micrograms per liter (µg/L)
- —(5)— Carbon Tetrachloride Isoconcentration Contour (µg/L) (Dashed Lines are Estimated)

Notes:

(ND) Nondetect

0 2,500 5,000
Feet

N

Filename: X:/EPA009/Garvey/MXDs/Superfund Carbon_TetChl_UpperAquifer_AB.mxd
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

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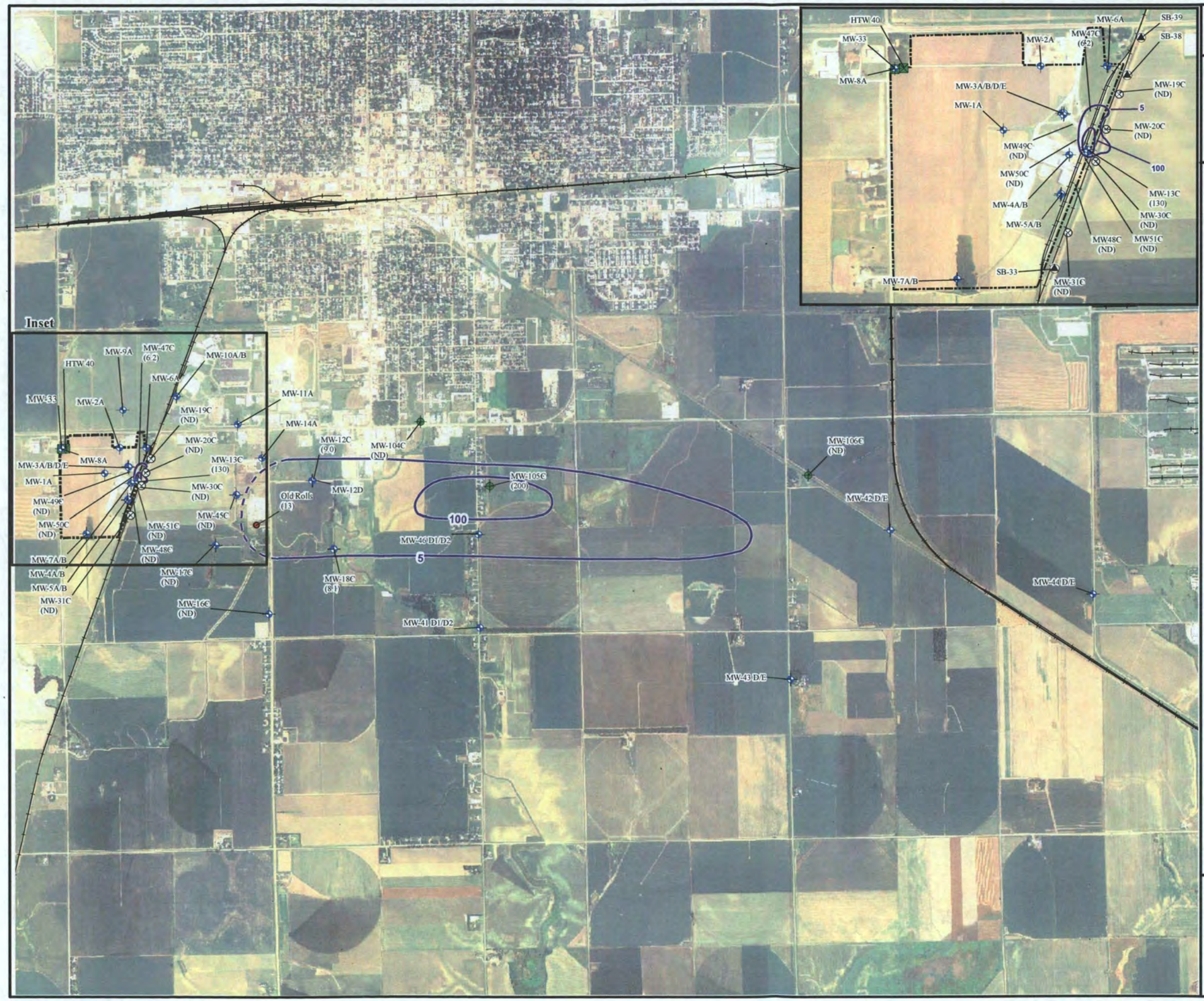
Figure 7
Carbon Tetrachloride in the Medial Aquifer Zone C
September 2011 Sampling



Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well Location
- ⊗ Multilevel Well
- Hydraulic Conductivity Well
- West Highway 6 & Highway 281 Site Monitoring Well
- (190) Carbon Tetrachloride Concentration in micrograms per liter (µg/L)
- —(5)— Carbon Tetrachloride Isoconcentration Contour (µg/L) (Dashed Lines are Estimated)
- Domestic / Irrigation Water Wells

Notes:

(ND) Nondetect

0 2,500 5,000
Feet

N

Filename:X:/EPA009/Garvey/Semi_GW_Sampling Carbon_TetChl_Medial_Aquifer_C.mxd
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

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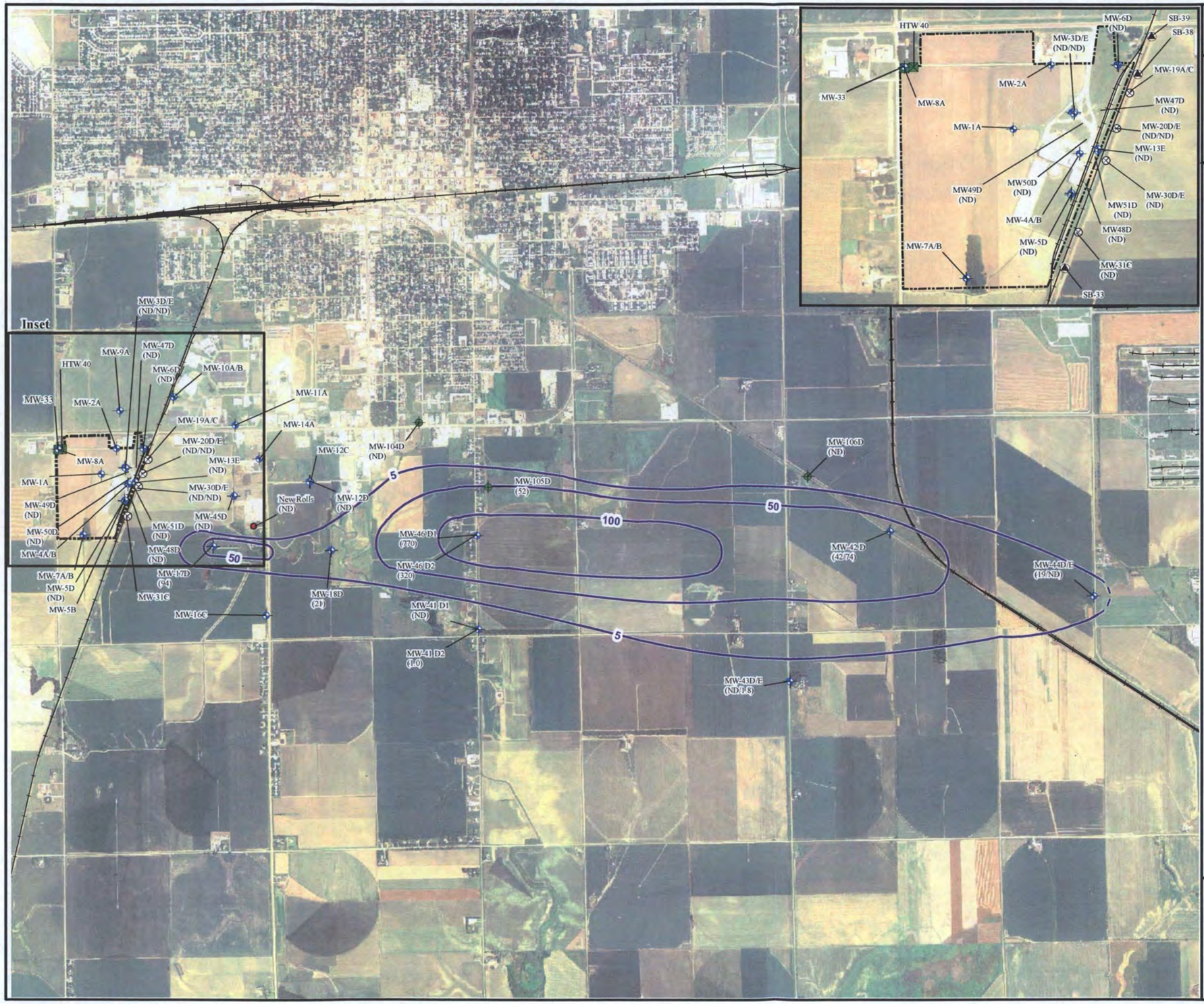
Figure 8
Carbon Tetrachloride in the Lower Aquifer Zone D/E September 2011 Sampling



Legend

- Garvey Property Boundary
- Railroad
- Monitoring Well Location
- ⊗ Multilevel
- Hydraulic Conductivity Well
- West Highway 6 & Highway 281 Site Monitoring Well
- (190) Carbon Tetrachloride Concentration in micrograms per liter (µg/L)
- —(5)— Carbon Tetrachloride Isoconcentration Contour (µg/L) (Dashed Lines are Estimated)
- Domestic / Irrigation Water Wells

Notes:

(ND) Nondetect

0 2,500 5,000
Feet

N

Filename: X:/EPA009/Garvey/Semi_GW_Sampling/Carbon_TetChl_LoweR_Aquifer_D.mxd
Project: EP9034.01.22.02.02
Revised: 01/05/12 ST
Source: ENSR GDB 2008, DNR

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