



July 21, 2014

Iowa Department of Natural Resources
Contaminated Sites Section
Wallace State Office Building
Des Moines, Iowa 50309

Attn: Mr. Dan Cook

Re: Notification and Site Closure Request
Paxton & Vierling Steel Company
504 Avenue H
Carter Lake, Iowa 51510
Terracon Project No. 05147102

Dear Mr. Cook:

Terracon Consultants, Inc. (Terracon) on behalf of Owen Industries, Inc (Owen) provides notification to Iowa Department of Natural Resources (IDNR) of encountering petroleum impact at the above-referenced site, and based on concentration levels and off-site sources, requests site closure through the Iowa Administrative Code 567 Chapter 133.

Attached to this letter are the following documents:

- The Limited Subsurface Investigation (LSI) report dated December 27, 2013 prepared by Terracon is submitted as a separate document. The report provides an evaluation of soil and groundwater for volatile organic compounds (VOC) and total extractable hydrocarbons (TEH) associated with historical use of the Owen property.
- Revised Tables 1 and 2 which are attached to this letter are modified from the Terracon LSI report, and have been updated to include the current (2014) IDNR Statewide Standards.
- Excerpts (Figures 3, 5, and 6) are attached from the Site Assessment Report dated February 21, 2006 prepared by Leggette, Brashears & Graham, Inc (LBG) for the Magellan Pipeline Company property, which is south of the Owen property. Figures 3, 5, and 6 shows the groundwater flow direction, benzene plume map, and TEH-diesel plume map, respectively.
- Excerpts (Table One and Site Map) are attached from the Environmental Site Investigation report dated May 18, 2012 prepared by RDG Geoscience and Engineering, Inc. (RDG) for the Sapp Brothers Bulk Petroleum Plant site, which is west of the Owen

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property. Analytical results are shown on Table One. The Site Map shows the location of the sampling points.

1.0 PROJECT INFORMATION

The Paxton & Vierling Steel Company (PVS) property (site) in Carter Lake, Pottawattamie County, Iowa is owned by Owen Industries, Inc. According to the Pottawattamie County Assessor's on-line database, the site is located on an 18.42 acre parcel. The site includes a two-story office building, a manufacturing and fabrication facility, and several warehouses. The buildings are constructed as slab-on-grade with concrete foundations. Adjoining properties with petroleum storage are the Magellan Pipeline Company to the south and Sapp Brothers Bulk Petroleum to the west.

As documented in the Terracon LSI report, Partner Engineering and Sciences, Inc. (Partner) prepared a Phase I ESA Report dated November 25, 2013 which included the following Recognized Environmental Condition (REC).

- "According to the 1934 Sanborn Fire Insurance Map, the subject property is depicted as developed with the Mona Motor Oil Company Oil Refinery. Four 25,000-barrel (bbl) above ground oil tanks are depicted on the northern portion, three 10,000-bbl aboveground oil tanks are depicted on the central portion of the subject property. A cracking plant, barrel house, boiler room, several pump houses, control house and smaller aboveground oil tanks are also depicted on the south-central portion of the subject property. Oil refining activities involve the storage and use of various hazardous materials during the processing of crude oil to usable motor oil. It is unclear as to how long the subject property was utilized in association to oil refining activities; however, based on the large quantities of oil stored within tanks and presumed storage and use of other hazardous materials, the former oil refinery is representative of an REC."

As described in the Phase I ESA report, the site was "...developed as an oil refinery in 1934, and developed with a metal fabrication facility in 1949 to the present time." Based on information from John Sunderland, President of Owen, the oil refinery was closed and dismantled in the late 1930s, when PVS purchased the property and built a steel fabrication and manufacturing facility.

Owen Industries authorized Terracon to conduct a Limited Subsurface Investigation (LSI) to address the above REC. The purpose of the LSI report was to evaluate soil and groundwater for VOC and TEH associated with the REC. A summary of the findings are as follows:

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Terracon

- Analytical results of VOC and/or TEH in soils and groundwater were reported at several boring locations. Boring B-4 exhibited a soil benzene concentration that was greater than the Tier 1 standards but less than the Statewide Standards. Also the B-4 groundwater sample exhibited a benzene concentration greater than both the Tier 1 and Statewide Standards. (Note: At the time of this LSI report, TEH-diesel and TEH-motor oil were not part of the current IDNR Statewide Standards.)
- Potential off-site sources of petroleum exist on adjacent properties to the west and south, which are proximal to the highest indications of contamination detected during the LSI assessment.

As part of the site evaluation, Terracon revised Tables 1 and 2 from the LSI report because the IDNR Land Recycling Standards have changed since the report was issued. Additionally, the Tier 1 standards, which are applicable to underground storage tanks sites, have been omitted from these Tables. The revised Tables 1 and 2 are attached to this letter.

- Revised Table 1 shows that one soil sample from Boring B-5 exhibited a TEH-motor concentration of 11,500 milligrams per kilogram (mg/kg) exceeding the IDNR Statewide Standard of 9,400 mg/kg. Other soil concentrations were less than the Statewide Standards.
- Revised Table 2 shows that a groundwater sample from B-4 exhibited a benzene concentration at 0.137 milligrams per liter (mg/l), which exceeds the protected and non-protected Statewide Standards of 0.005 and 0.064 mg/l, respectively. Additionally, a groundwater sample from B-3 exhibited TEH-diesel (2.33 mg/l) and TEH-motor oil (8.39 mg/l) concentrations exceeding the IDNR Protected Statewide Standard, but were less than the Non-Protected Statewide Standard. Other groundwater concentrations were less than the Statewide Standards.

Terracon also reviewed previous environmental reports proximal to the Owen site and provides excerpts from off-site reports to indicate that petroleum impact observed near the southern and western property borders may have originated off-site. Excerpts from the Magellan Site Assessment Report dated February 21, 2006 and the Sapp Brothers Environmental Site Investigation report dated May 18, 2012 are discussed below. The approximate locations of Borings B-3, B-4, and B-5 advanced by Terracon in 2013 as part of the LSI report were added to Figures 5 and 6 from the Magellan report. Attached are the following documents:

- Figure 3 from the Magellan Site Assessment Report dated February 21, 2006 shows that the groundwater flow is generally southerly.

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- Figure 5 from the same Magellan report shows the 2005 benzene concentrations on the southern portion the Owen property proximal to B-4 ranged to 0.410 mg/l which exceed the 2013 benzene concentration on the Owen property of 0.137 mg/l.
- Figure 6 from the same Magellan report show the DRO concentrations on the Magellan property range to 31.6 mg/l which exceed the observed concentrations on the Owen property of 2.33 mg/l TEH-diesel and 8.39 mg/l TEH-motor oil.
- The latest documentation on the IDNR website indicates that the status of the Magellan site was "closed" on June 22, 2006 and Mr. Dan Cook is the IDNR contact.
- An Environmental Site Investigation report dated May 18, 2012 for the Sapp Brothers Bulk Petroleum Plant site described a fuel oil release of approximately 3200 gallons in 2011. Soil and groundwater samples were collected and monitoring wells were installed near the release location. Soil and groundwater samples exhibited elevated concentrations of TEH-diesel and TEH-waste oil. See attached "Table One" and "Site Map" from the Sapp Brothers report. Contaminant plume maps and groundwater flow diagrams were not available. The latest correspondence (dated January 27, 2014) on the IDNR website indicates that additional monitoring is required and Mr. Hylton Jackson is the IDNR contact.

2.0 CONCLUSIONS

Based on the results of the Terracon LSI, petroleum impacted groundwater was encountered in B-3 and B-4, and petroleum impacted soil was encountered in B-5, which were greater than the IDNR Statewide Standards. The southern border of the Owen site has been previously documented to be impacted from the Magellan Pipeline Company bulk petroleum storage facility to the south and the site has been closed by IDNR. The southwest corner of the Owen site may be impacted from the Sapp Brothers Bulk Petroleum to the west. Therefore, we request closure of the Owen site through Iowa Administrative Code 567 Chapter 133.

3.0 GENERAL COMMENTS

The analysis and opinions expressed in this report are based upon data obtained from information discussed in this report. This report does not reflect any variations in subsurface chemistry, stratigraphy, of geohydrology which may occur across the site. Actual subsurface conditions may vary and may not become evident without further exploration. These services were conducted in general accordance with the scope of work authorized by Owen (client).

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This report has been prepared for the exclusive legal use and reliance of Owen for specific application to the project as discussed. Legal reliance, distribution, or reuse of this report by any other party is prohibited without the express written authorization of Owen and Terracon. Reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the agreement. The limitation of liability defined in the agreement is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

If you have questions regarding this report, please contact David Jordan at 402-384-7027 or by E-mail at dcjordan@terracon.com.

Sincerely,

Terracon Consultants, Inc.

A handwritten signature in blue ink that reads "David Jordan".

David Jordan, P.G.
Project Geologist

A handwritten signature in black ink that reads "Michael E. Hagemeister".
A small handwritten "for" in black ink.

Michael E. Hagemeister, P.E.*
Senior Principal
*Registered in Nebraska

Copy to: Addressee (1)

Mr. John Sunderman, Owen Industries, P.O. Box 1085, Omaha, Nebraska 68101-1085 (1)

REVISED TABLE 1

PVS LSI
504 AVENUE H
CARTER LAKE, IOWA 51510

Terracon Project No. 05137191

Soil Sample Detection Summary

Sample ID	Date	Sample Interval (Feet Below Ground Surface)	Benzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Ethylbenzene	Hexane	Isopropylbenzene	p-Isopropylbenzene	Naphthalene	N-Propylbenzene	1,1,2,2-Tetrachloroethane	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	TEH as Gasoline	TEH as Diesel	TEH as Motor Oil
B-1	12/18/13	2-4	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	<0.106	0.137	<0.106	<0.106	<0.159	<11.8	<11.8	17.9
B-2	12/18/13	2-4	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.119	<0.179	199	130	96.6
B-3	12/19/13	8-10	<0.122	1.4	0.965	<0.122	<0.122	<0.122	0.621	<0.122	0.973	0.666	<0.122	<0.122	<0.122	<0.122	<0.122	<0.183	738	771	188
B-4	12/19/13	4-6	0.983	4.91	1.75	0.128	11.7	1.02	3.25	2.29	9.92	5.94	0.208	0.392	<0.0971	0.571	1.43	9.2	2,470	3,350	637
B-5	12/19/13	6-8	<0.116	0.226	0.402	<0.116	<0.116	<0.116	0.228	<0.116	<0.116	<0.116	0.687	<0.116	<0.116	<0.116	<0.116	<0.175	1,160	20,800	11,500
B-6	12/19/13	0-2	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.132	<0.198	<11.7	22.7	770
Current Iowa Statewide Standards for Soil			56	3,800	NA	NA	7,600	4,600	NA	NA	1,100	7,600	15	6,100	NA	3,800	760	15,000	NA	28,000	9,400

Notes:

Iowa Statewide Standards for Soil are established in accordance with 567 IAC Chapter 137.

Bolded values reported for the sample contaminant concentrations indicate a protection standard has been exceeded.

Concentrations in milligrams per kilogram (mg/kg)

NA - Not Applicable - There are no Statewide Standards for this chemical in soil.

REVISED TABLE 2

PVS LSI
504 AVENUE H
CARTER LAKE, IOWA 51510

Terracon Project No. 05137191

Groundwater Sample Detection Summary

Sample ID	Date	Benzene	n-Butylbenzene	sec-Butylbenzene	Ethylbenzene	Hexane	Isopropylbenzene	p-Isopropyltoluene	Naphthalene	N-Propylbenzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	TEH as Gasoline	TEH as Diesel	TEH as Motor Oil
B-1	12/19/13	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	0.0021	<0.001	<0.001	<0.003	<0.288	<0.288	<0.288
B-2	12/18/13	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.003	<0.341	<0.341	<0.341
B-3	12/19/13	<0.0005	0.00841	0.0103	<0.001	<0.001	0.0145	<0.001	0.00744	0.0122	<0.001	<0.001	<0.001	<0.003	2.19	2.33	8.39
B-4	12/19/13	0.137	0.00773	0.00396	0.0887	0.00231	0.0177	0.00507	0.0578	0.0245	0.00548	0.00572	0.00608	0.0565	2.16	1.56	0.382
B-5	12/19/13	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.003	<0.278	0.603	0.702
B-6	12/19/13	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.003	<0.288	<0.288	<0.288
Iowa Statewide Standards for a Protected Groundwater Source		0.005	0.35	NA	0.7	0.42	NA	NA	0.1	3.4	1	0.35	0.07	10	NA	2.2	0.73
Iowa Statewide Standards for a Non-Protected Groundwater Source		0.064	1.8	NA	3.5	2.1	NA	NA	0.7	17	5	1.8	0.35	50	NA	44	15

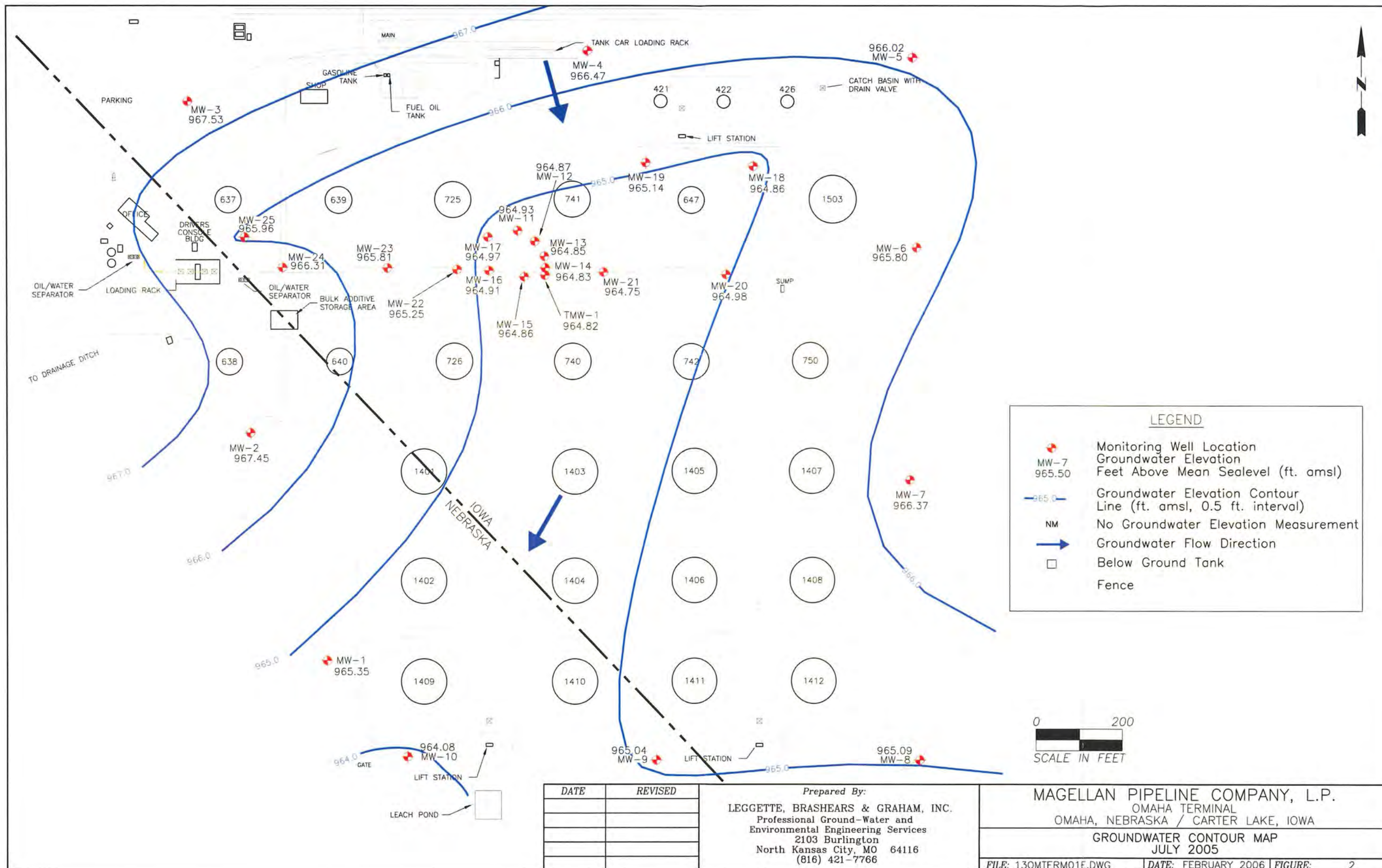
Notes:

Iowa Statewide Standards for Protected and Non-Protected Groundwater Sources are established in accordance with 567 IAC Chapter 137.

Bolded values reported for the sample contaminant concentrations indicate a protection standard has been exceeded.

Concentrations are presented in units of milligrams per liter (mg/L).

NA - Not Applicable - There are no Statewide Standards for this chemical in groundwater.



Note: Off-site detail were not surveyed. The drawings are not to scale, but show the approximate size and layout of the features of interest.

Locations of borings B-3, B-4, and B-5 are from a Terracon Limited Subsurface Investigation (LSI) report dated December 27, 2013.

0 100
SCALE IN FEET



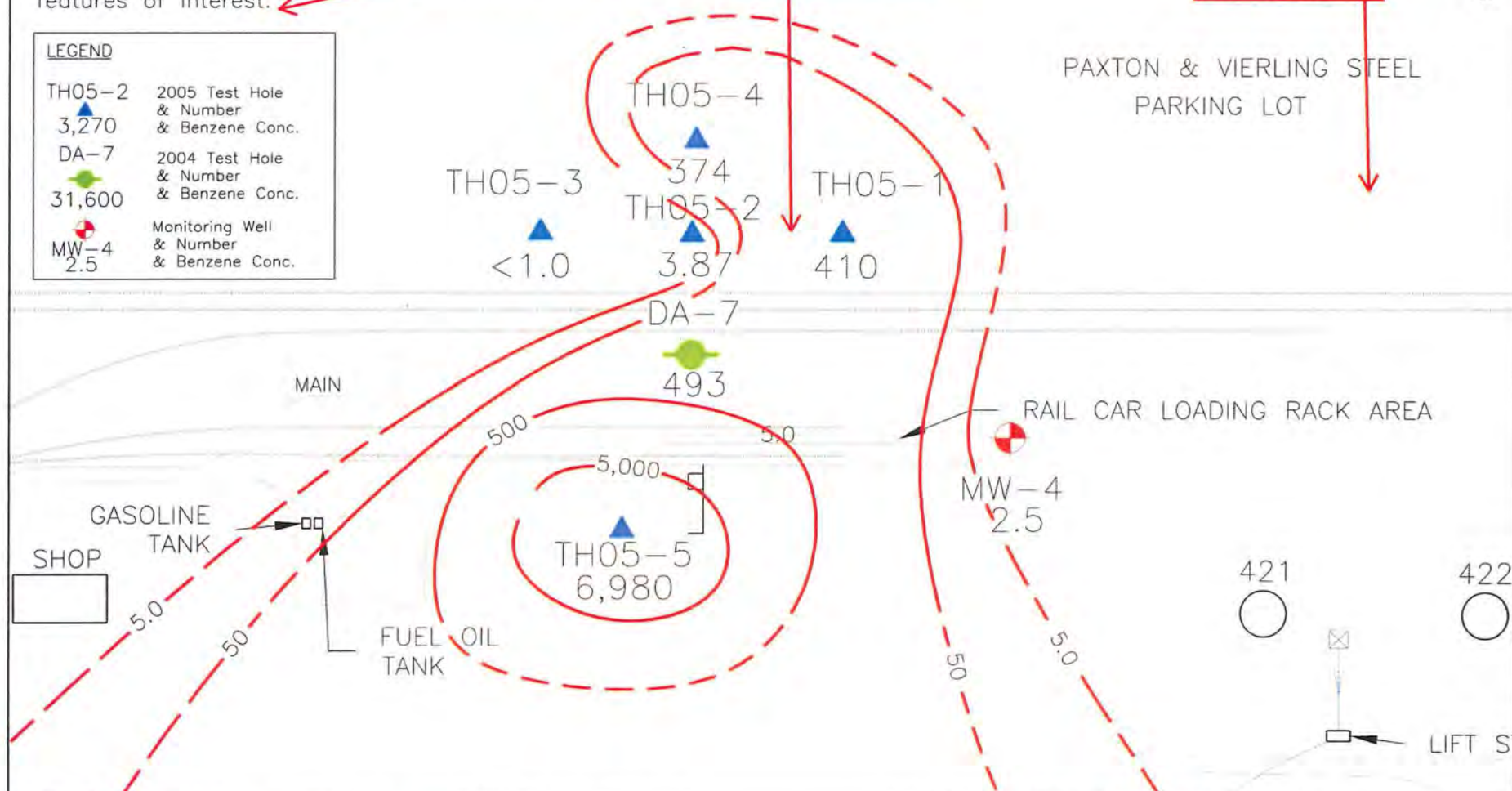
Approximate Location of B-3

Approximate Location of B-4

Approximate Location of B-5

LEGEND

- TH05-2 2005 Test Hole & Number & Benzene Conc.
3,270
- DA-7 2004 Test Hole & Number & Benzene Conc.
31,600
- MW-4 Monitoring Well & Number & Benzene Conc.
2.5



DATE	REVISED	Prepared By:	MAGELLAN PIPELINE COMPANY, L.P.		
		LEGGETTE, BRASHEARS & GRAHAM, INC.	OMAHA TERMINAL		
		Professional Ground-Water and	CARTER LAKE, IOWA		
		Environmental Engineering Services	TEST HOLE LOCATIONS AND BENZENE CONCENTRATIONS (ug/L)		
		2103 Burlington Street	13 TO 17 FEET BELOW GRADE		
		North Kansas City, Missouri 64116	FILE: 13OMTERMO1D.dwg	DATE: FEBRUARY 2006	FIGURE: 5
		(816) 421-7766			

Note: Off-site detail were not surveyed. The drawings are not to scale, but show the approximate size and layout of the features of interest.

Locations of borings B-3, B-4, and B-5 are from a Terracon Limited Subsurface Investigation (LSI) report dated December 27, 2013.

0 100
SCALE IN FEET

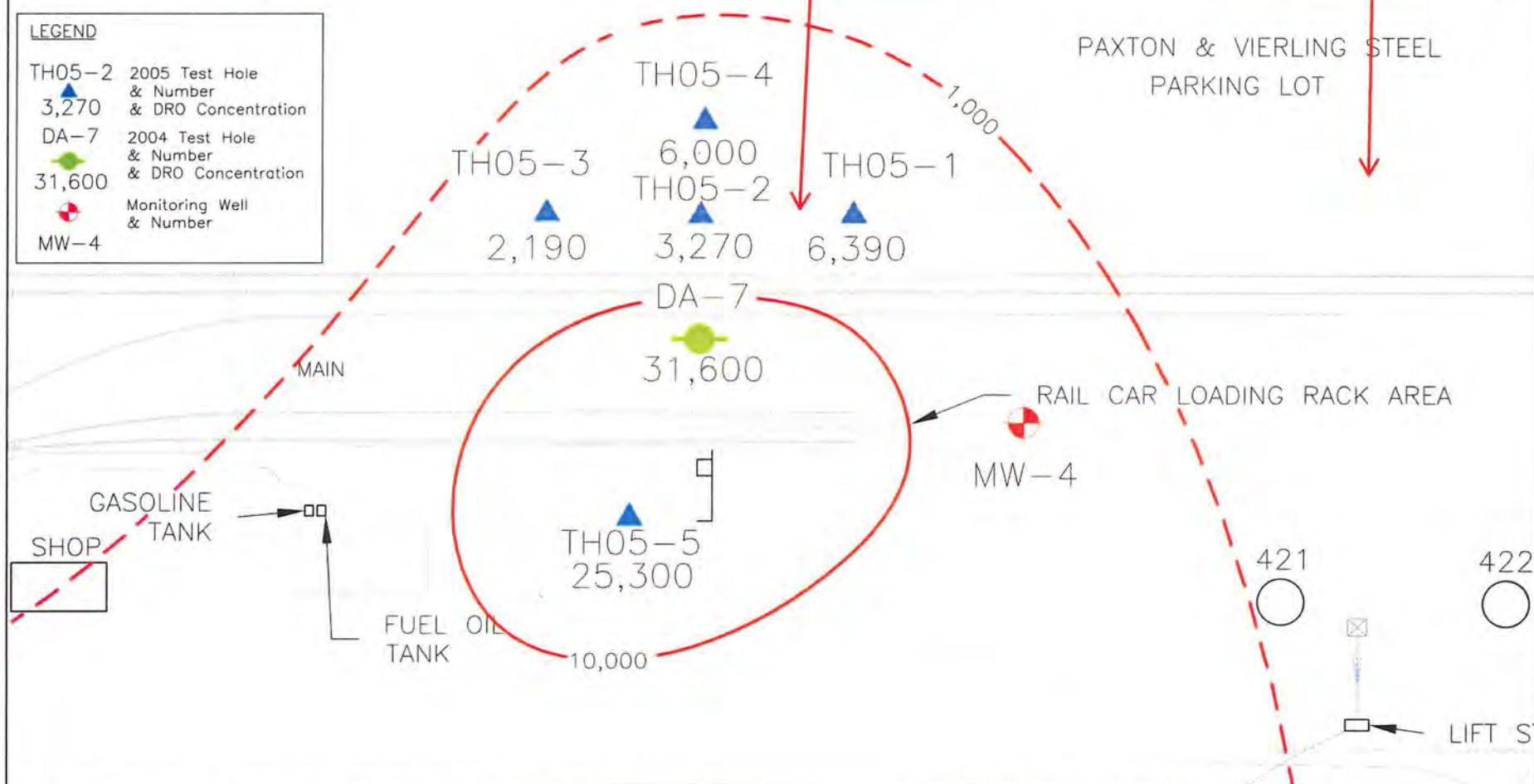
Approximate Location of B-3

Approximate Location of B-4

Approximate Location of B-5

LEGEND

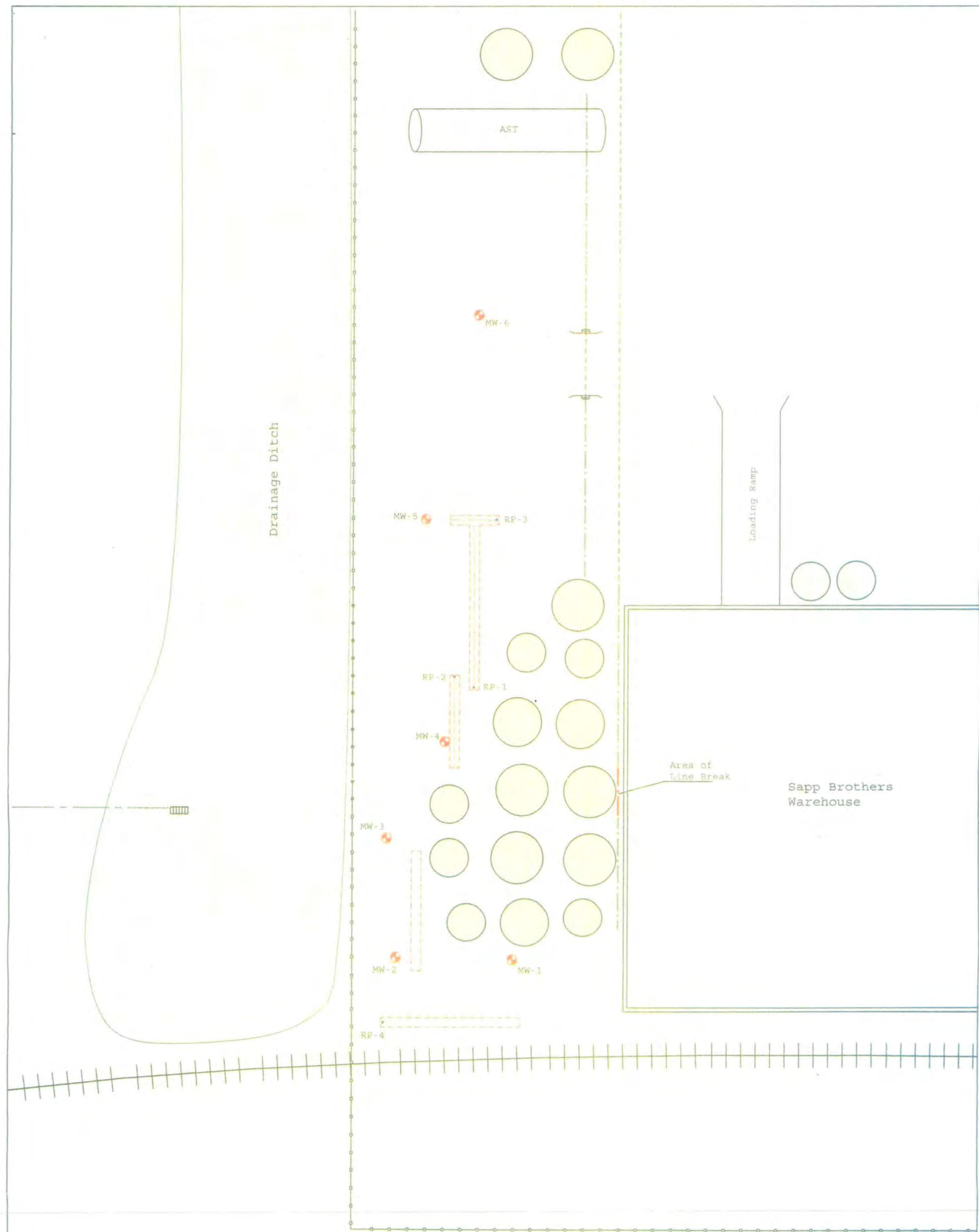
- TH05-2 2005 Test Hole & Number & DRO Concentration
3,270
- DA-7 2004 Test Hole & Number & DRO Concentration
31,600
- Monitoring Well & Number
MW-4



DATE	REVISED	Prepared By:	MAGELLAN PIPELINE COMPANY, L.P.		
		LEGETTE, BRASHEARS & GRAHAM, INC.	OMAHA TERMINAL		
		Professional Ground-Water and	CARTER LAKE, IOWA		
		Environmental Engineering Services	TEST HOLE LOCATIONS AND DRO CONCENTRATIONS (ug/L)		
		2103 Burlington Street	13 TO 17 FEET BELOW GRADE		
		North Kansas City, Missouri 64116	FILE: 13OMTERMO1D.dwg	DATE: FEBRUARY 2006	FIGURE: 6
		(816) 421-7766			

TABLE ONE
Soil and Groundwater Analytical Results
Sapp Brothers Bulk Plant
Carter Lake, Iowa

Soil					
Sample Designation	Collection Date				
		TEH			
		Diesel	Waste Oil	Gasoline	
MW-1 5-7'	3/20/2012	337.0	196.0	354.0	
MW-2 9-11'	3/21/2012	< 11.6	< 11.6	20.1	
MW-3 13-15'	3/21/2012	< 11.7	17.3	< 11.7	
MW-4 4-6'	3/21/2012	< 11.9	25.5	< 11.9	
MW-5 5-7'	3/21/2012	< 11.7	< 11.7	< 11.7	
MW-6 6-8'	3/21/2012	< 11.8	< 11.8	< 11.8	
Soil results reported in parts per million (ppm)					
Groundwater					
Sample Designation	Collection Date				
		TEH			
		Diesel	Waste Oil	Gasoline	
MW-1	4/3/2012	1070.0	3150.0	992.0	
MW-2	4/3/2012	1020.0	4480.0	1570.0	
MW-3	4/3/2012	1130.0	6030.0	652.0	
MW-4	4/3/2012	2440.0	5280.0	670.0	
MW-5	4/3/2012	977.0	4550.0	543.0	
MW-6	4/3/2012	322.0	1760.0	< 300.0	
Groundwater results reported in parts per billion (ppb)					



- Monitoring Well
- Interceptor Trench Abandoned
- Fuel Collection Screen
- Above Ground Storage Tank
- Above Grade Product Line
- Below Grade Product Line
- Underground Telephone
- Sanitary Sewer
- Storm Sewer
- Utility Access
- Sewer Inlet



0' 10' 20'

Site Map

Sapp Brothers Bulk Plant
500 1/2 Avenue H
Carter Lake, Iowa

Date: 04/03/12
Prepared by: SPC
Reviewed by: KL

rdg | Geoscience & Engineering