

Further Site Investigation

*Former Union Street Sunoco Station
1126 South Union Street
Mishawaka, Indiana*

Prepared for:
City of Mishawaka

Submitted by:
 **Qepi** *Quality Environmental Professionals, Inc.*

May 12, 2008



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On behalf of the City of Mishawaka, Quality Environmental Professionals, Inc. (Qepi) has completed this Further Site Investigation (FSI) Report for the former Union Street Sunoco Station, located at 1126 South Union Street in Mishawaka, Indiana. A site location map is provided as Figure 1.

The goal of this investigation was to further characterize and delineate onsite impacts to groundwater initially found during a limited subsurface investigation completed in May 2007. The scope of work completed by Qepi included the installation of nine soil borings and five groundwater monitoring wells. Four soil borings were advanced north of the former station building, along East 12th Street, to delineate groundwater impacts found in soil borings advanced in May 2007. Two soil borings were advanced west of the former station building, along South Union Street, and three were advanced south of the former station building, directly north of East 13th Street, to determine whether groundwater impacts exist along the property boundary and to evaluate the potential for impacts to have migrated offsite. Four of the nine soil borings advanced onsite were completed as groundwater monitoring wells. In addition, one groundwater monitoring well was installed in the center of the property in a location previously shown to exhibit elevated groundwater impacts. Soil boring and monitoring well locations are shown on Figure 2.

Results from the groundwater samples collected from the soil borings and monitoring wells indicate that onsite groundwater impacts are present exceeding the Indiana Department of Environmental Management (IDEM) Risk Integrated System of Closure (RISC) Residential Default Cleanup levels (RDCLs) and Industrial Default Cleanup levels (IDCLs). Impacts to groundwater onsite are delineated; however further delineation is required to evaluate potential migrating impacts offsite. Qepi recommends, per IDEM guidance, the continuation of FSI activities in order to fully delineate impacts both onsite and offsite.



1.1 Site Location and History

The former Union Street Sunoco Station is located at 1126 South Union Street in Penn Township of Saint Joseph County, Mishawaka, Indiana. The facility is located on the southeast corner of South Union Street and East 12th Street. The site is located directly south of downtown Mishawaka, Indiana. The subject property is located in Section 22, Township 37 North, and Range 3 East in Saint Joseph, Indiana. The site is represented on Figure 1 on the United States Geological Survey (USGS) 7.5 Minute Topographic Map of the South Bend East, Indiana Quadrangle.

The site was historically used as a gasoline service station and automotive repair shop. The site ceased operation as a gasoline service station in 1995 and continued operation as an automotive repair shop until 2005, when it was vacated. The site was originally developed for use as a service station in 1932. Prior to 1932 the site was undeveloped. The station building was demolished in late 2007. The site is currently vacant and used for green space.

The site historically operated five steel USTs, including three 3,000 gallon tanks and two 1,000 gallon tanks, which were registered on May 2, 1986 to J & K Oil Company of Elkhart, Indiana. Four of the tanks were installed in 1971 and one of the tanks was installed in 1976. The three 3,000 gallon USTs were stationed on the southern portion of the site in one tank pit. One 1,000 gallon UST was stationed adjacent to the building to the south and the other 1,000 gallon UST was stationed adjacent to the building to the north. The USTs contained gasoline.

Each of the five tanks were permanently closed on December 23, 1994 by Kleencor Drilling of Wakarusa, Indiana. A review of the IDEM File Room indicated that seven USTs were removed by Kleencor at the time of tank closure. In addition to the five registered tanks, two additional unregistered 1,200 gallon USTs, previously used to contain heating oil, were also removed. These 1,200 gallon USTs were stationed adjacent to the building to the south, in the same tank pit as the southern 1,000 gallon UST.

During UST closure activities, Kleencor discovered that one of the gasoline USTs had potentially caused impacts to subsurface media. IDEM issued the site Incident # 199401501. In January of 1995, Kleencor installed two feeder lines into the former gasoline UST pit and in situ injected bacteria and bio solve solution into the tank pit. A second and third feeding of bacteria and bio solve solution was performed in June and October of 1995. Sampling of three monitoring wells around the former tank pit area in February 1996 indicated sample results were below laboratory detection limits for BTEX constituents.

A *Limited Phase II Environmental Site Assessment* was conducted in October, 2006 by Heartland Environmental Associates, Inc (Heartland) of South Bend, Indiana. Under guidance from IDEM, Heartland advanced three soil borings to a maximum depth of 16 feet below ground surface (bgs) to investigation potential impacts associated with the northern tank pit located along the northern edge of the site, the southern tank pit located along the southern portion of the site, and the waste oil and heating oil tank pit located along the eastern portion of the site. Soil and groundwater laboratory analytical results did not detect benzene, toluene, ethylbenzene, xylenes or methyl-tert



1.0 Introduction

(Continued)

butyl ether (BTEX/MTBE), total petroleum hydrocarbon (TPH), or polynuclear aromatic hydrocarbons (PAH) concentrations above IDEM RISC RDCLs in any of the borings advanced.

In a letter dated November 15, 2006, IDEM concluded that No Further Action was required at the site based on soil and groundwater sample results obtained in the Limited Phase II performed by Heartland. This No Further Action was provided under RISC Residential Guidance.

1.2 Overview of Current Site Conditions

Qepi completed a Phase I Environmental Site Assessment (Phase I ESA) in March 2007. Findings from the Phase I ESA confirmed a potential concern for subsurface impacts associated with the former USTs and pump island area.

With the finding from the Phase I ESA, Qepi completed a Limited Subsurface Investigation in May 2007. Qepi advanced five soil borings (SB-1 through SB-5) to 16 feet below ground surface (bgs) and collected soil and groundwater samples. The five soil borings advanced were performed to evaluate the potential for impacts at locations not addressed by the Heartland site investigation. According to the *Limited Phase II Sampling and Analysis Report* dated May 10, 2007, petroleum impacts to the soil and groundwater onsite were present at concentrations exceeding the IDEM RISC Residential and Industrial Default cleanup objectives throughout the property. Additional investigation was recommended to further delineate impacts to soil and groundwater at the site.

1.3 Chemicals of Concern

The IDEM LUST 1994 Guidance and RISC User's Guide identifies chemicals of concern (COCs) associated with petroleum hydrocarbon products. For the purpose of classifying COCs, the following categories of petroleum products are recognized: gasoline and high-end liquid hydrocarbon fuels. Five former USTs located onsite stored gasoline and diesel from at least 1971 to December 1994. Two additional USTs containing heating oil were also operated onsite. The site operated as a gasoline service station dating back to 1932. Table 1 is a list of the COCs and the analytical methods used for this site as determined through sampling and historic investigations.



2.0 Site Investigation

2.1 Sampling Rationale

A Limited Subsurface Investigation was completed by Qepi in May 2007. Qepi provided oversight for the advancement of five soil borings (SB-1 through SB-5) to 16 feet bgs and collected soil and groundwater samples. According to the *Limited Phase II Sampling and Analysis Report* dated May 10, 2007, petroleum impacts to the soil and groundwater onsite were present at concentrations exceeding the IDEM RISC Residential and Industrial Default cleanup objectives. Soil sampling data generated during this investigation are illustrated in Figure 3 and summarized in Table Series 2. Water sampling data generated during this investigation are illustrated in Figure 4 and summarized in Table Series 3.

Qepi advanced nine soil borings and installed five monitoring wells in activities completed February 28 and February 29, 2008, to delineate impacts to the soil and groundwater found during the limited subsurface investigation. The nine soil borings were advanced to a depth of sixteen feet bgs. Groundwater was encountered at ten feet to twelve feet bgs. Soil borings SB-6, SB-7, SB-8 and SB-9 were advanced along the northern portion of the property, north of the former service station footprint. Soil borings SB-12 and SB-13 were advanced onsite along the western boundary of the property, west of the former service station footprint and soil borings SB-10, SB-11 and SB-14 were advanced in the southern portion of the property, south of the former service station footprint. Soil borings were advanced in these areas to evaluate and further delineate impacts to soil and groundwater previously encountered at the site. Soil borings SB-6, SB-9, SB-11 and SB-12 were completed as monitoring wells MW-2, MW-3, MW-4 and MW-5, respectively. Additionally, a fifth monitoring well, MW-1, was installed centrally located on the property. The monitoring wells were installed to a depth of approximately 12.5 to 16 feet bgs with a 10-foot screen. The locations of the soil borings and monitoring wells are shown on Figure 2.

Subsurface soils from soil borings SB-6, SB-8, SB-10 and SB-11 were sampled for TPH gasoline range organics (GRO) and extended range organics (ERO) using the United States Environmental Protection Agency (USEPA) SW-846 Method 8015. Groundwater sampled from the soil borings and monitoring wells were analyzed for TPH GRO/ERO using USEPA SW-846 Method 8015 and for volatile organic compounds (VOCs) using USEPA SW-846 Method 8260.

2.2 Soil Sampling Event

The soil boring advancement and monitoring well installation activities were completed from February 28 through February 29, 2008. Midway Services, Inc. of Knightstown, Indiana was contracted to install the soil borings and monitoring wells. Soil borings were completed using a direct push probe and soil samples were continuously collected in four-foot intervals with a plastic sleeve. Drilling for the monitoring well installation was completed with hollow-stem augers.

Subsurface soils were continuously logged in two-foot intervals and screened for volatile organic vapors using a pre-calibrated MSA photoionization detector (PID) equipped with a 10.2 eV lamp. In addition, the soils were inspected for evidence of petroleum impacts, such as staining or odors. Based on previous subsurface investigation results, only soil sample intervals exhibiting



2.0 Site Investigation

(Continued)

the highest PID reading from soil boring locations to the north and south of the former station building were collected for laboratory analysis. Soil boring logs including monitoring well construction diagrams are included in Appendix B and field screening results are included in Table 4. Soil sample locations are presented on Figure 2. Geologic cross-sections are included as Figures 5a and 5b.

The soil samples were labeled and placed in an iced secured cooler. Samples were transported under Qepi Chain of Custody protocol and submitted to ENVision Laboratories, Inc. (ENVision) of Indianapolis, Indiana for analysis.

2.3 Groundwater Sampling Event

Monitoring wells MW-1 through MW-5 were installed to a depth of 12.5 to 16 feet bgs using a hollow stem auger drill rig. The monitoring wells were constructed with 10 feet of 2-inch diameter, 0.010-inch slot PVC screen and completed with 2-inch diameter PVC riser. The annular space was filled with #4 quartz sand to 1-foot above the screen and filled to the surface with hydrated bentonite chips. Soil cuttings generated during the monitoring well installation were placed in 55-gallon Department of Transportation (DOT) approved drums and staged on site until proper disposal arrangements were made and the drums were removed.

After the monitoring wells had been set for at least two days, Qepi personnel developed each monitoring well using a surge block to initiate groundwater movement through the well and a submersible well pump to remove 10 well volumes of groundwater from each monitoring well. The development water was placed in 55-gallon DOT approved drums and staged on site until proper disposal arrangements were made and the drums were removed.

Groundwater was sampled from the monitoring wells on March 25, 2008. Three well volumes of groundwater were purged from each monitoring well using dedicated disposable bailers. Following monitoring well purging and groundwater recharge, water samples were collected using dedicated disposable bailers. The water samples were labeled and placed in a secured, iced cooler and transported under Qepi Chain of Custody protocol to ENVision for laboratory analysis.

2.4 Groundwater Elevation Calculation

On March 25, 2008, Qepi personnel measured and recorded static water levels in monitoring wells MW-1 to MW-5 using a Solinst Instruments Oil/Water Interface Meter. Water was encountered at depths ranging from 10.44 feet to 11.04 feet below top of casing (TOC). Free product was not detected in any of the monitoring wells. Based on the static water level measurements collected on March 25, 2008, groundwater flow at the site is to the northeast. A groundwater flow map is provided as Figure 6.



2.0 Site Investigation

(Continued)

2.5 Soil Analytical Results

A total of four soil samples were collected during further site investigation activities on February 28 and February 29, 2008. Only limited soil samples were collected based on previous site investigations indicating impacts to soil present below IDEM RISC closure objectives. Soil samples were collected from soil borings SB-6, SB-8, SB-10 and SB-11. Of the four soil samples collected, one sample (SB-11) exceeded the IDEM RISC RDCLs of 80 parts per million (ppm) for TPH (DRO). No other concentrations were encountered in the soil samples exceeding IDEM RISC RDCLs or IDCLs.

Soil analytical results are included in Table 5, illustrated on Figure 7 and provided in Appendix B. PID readings from the soil borings are provided on Table 4 and on the soil boring and monitoring well construction logs, which are included as Appendix A.

2.6 Groundwater Analytical Results

A total of ten groundwater samples were collected from soil borings and monitoring wells during further site investigation activities. Five groundwater samples were collected from soil borings SB-7, SB-8, SB-10, SB-13 and SB-14 on February 28 and February 29, 2008. An additional five groundwater samples were collected from monitoring wells MW-1 through MW-5 on March 25, 2008. Of the ten water samples collected, six exceeded the IDEM RISC RDCLs for TPH (GRO) and eight exceeded IDEM RISC RDCLs for TPH (DRO). Additionally, three groundwater samples exceeded IDEM RISC IDCLs for TPH (GRO) and six exceeded IDEM RISC IDCLs for TPH (ERO). Monitoring well MW-1 exhibited a benzene concentration of 18.6 ppb which exceeds the IDEM RISC RDCL of 5 ppb. Additionally, monitoring well MW-5 exhibited a benzene concentration of 7.74 ppb, exceeding the IDEM RISC RDCL. Monitoring well MW-1 also exhibited an ethylbenzene concentration of 877 ppb, exceeding the IDEM RISC RDCL of 700 ppb. Soil borings SB-7 and SB-8 exhibited naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene concentrations exceeding IDEM RISC RDCLs. No other chemical concentrations were encountered exceeding IDEM RISC RDCLs or IDCLs. Groundwater analytical results are included in Table 6 and illustrated on Figure 8. Groundwater laboratory analytical reports are included in Appendix B.



3.0 Conclusions and Recommendations

Qepi advanced nine soil borings and installed five monitoring wells in activities dated February 28 and February 29, 2008, in an attempt to delineate impacts in soil and groundwater found during the previously conducted limited subsurface investigation. Groundwater was encountered from ten feet to twelve feet bgs. Soil borings were advanced throughout the property in order to assess potential impacts associated with historical service station operations at the site. Four soil borings (SB-6, SB-7, SB-8 and SB-9) were advanced north of the former station building, along East 12th Street, to delineate groundwater impacts found in soil borings advanced in May 2007. Two soil borings (SB-12 and SB-13) were advanced west of the former station building, along South Union Street, and three soil borings (SB-10, SB-11 and SB-14) were advanced south of the former station building, directly north of East 13th Street, to determine whether groundwater impacts exist along the property boundary and to evaluate the potential for impacts to have migrated across the streets. Soil borings SB-6, SB-9, SB-11 and SB-12 were completed as monitoring wells MW-2, MW-3, MW-4 and MW-5, respectively. In addition, one groundwater monitoring well, MW-1, was installed in the center of the property in a location previously shown to exhibit elevated groundwater impacts.

A total of four soil samples and ten groundwater samples were collected during further site investigation activities. Of the four soil samples collected, one exceeded IDEM RISC RDCLs for TPH (GRO). No additional soil impacts were encountered exceeding IDEM RISC RDCLs or IDCLs. Of the ten groundwater samples collected, six exceeded the IDEM RISC RDCLs for TPH (GRO) and eight exceeded IDEM RISC RDCLs for TPH (ERO). Additionally, three groundwater samples exceeded IDEM RISC IDCLs for TPH (GRO) and six exceeded IDEM RISC IDCLs for TPH (ERO). Two groundwater samples exhibited benzene, naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene impacts exceeding IDEM RISC RDCLs; however these impacts did not exceed IDEM RISC IDCLs.

Based on the results of the soil sampling events and coupled with previously conducted subsurface investigations, soil remediation is not recommended at this time.

Groundwater samples collected from the monitoring wells exceed IDEM RISC IDCLs. Based on the elevated TPH concentrations in these monitoring wells, groundwater remediation will be necessary. Based on IDEM guidelines, in order to fully characterize and delineate site impacts, additional groundwater samples will need to be collected beyond the site across Union Street, East 12th Street and East 13th Street to confirm impacts are not migrating offsite. Qepi recommends the advancement and sampling of four additional soil borings; one across Union Street, one across East 12th Street and two across East 13th Street. Soil borings will need to be advanced directly across from the locations of existing monitoring wells. Qepi recommends sampling these soil borings for groundwater only. After the collection of these groundwater samples, a conceptual model of impacts can be created, after which Qepi will evaluate and recommend proper remedial alternatives to address groundwater issues at the site.

Qepi understands that the site is currently not entered into any program within IDEM. Additionally, Qepi understands that the site has been previously been issued a No Further Action letter with regards to impacts previously encountered at the site. Qepi recommends that the City of Mishawaka complete full site characterization and delineation. After completing the site delineation, Qepi will evaluate which IDEM programs are most suitable for the site and will provide these options, along with remediation and closure options, with future reports.



4.0 References

Quality Environmental Professionals, Inc., *Phase I Environmental Site Assessment*, March 28, 2007.

Quality Environmental Professionals, Inc., *Limited Phase II Sampling and Analysis Report*, May 10, 2007.

Heartland Environmental Associates, Inc., *Limited Phase II Environmental Site Assessment*. October 2006.

Kleencor Drilling, Inc., Corrective Action Progress Report Forms. Submitted February 1996.

Indiana Department of Environmental Management, Leaking Underground Storage Tank File LUST #199401501.

United States Geological Survey, South Bend East, Indiana Quadrangle, 7.5 Minute Series Topographic Map.



5.0 Signature

No environmental investigation can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Further, there is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions.

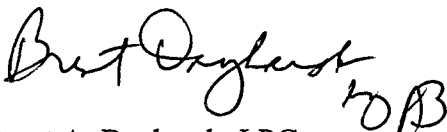
Qepi is not responsible for the identification of recognized environmental conditions that may be present outside this evaluated area, or at a depth greater than what the soil borings were advanced.

Qepi is not responsible for unrecorded data pertaining to the property, nor are we responsible for independent conclusions or opinions made by others of this report. **Qepi** makes no warranties, expressed or implied, as to the fitness or merchantability of this report for any particular purpose.

This Further Site Investigation Report was prepared by Mr. Nivas R. Vijay, Project Manager and was reviewed by Mr. Brent A. Dayharsh, Director of Technical Operations.

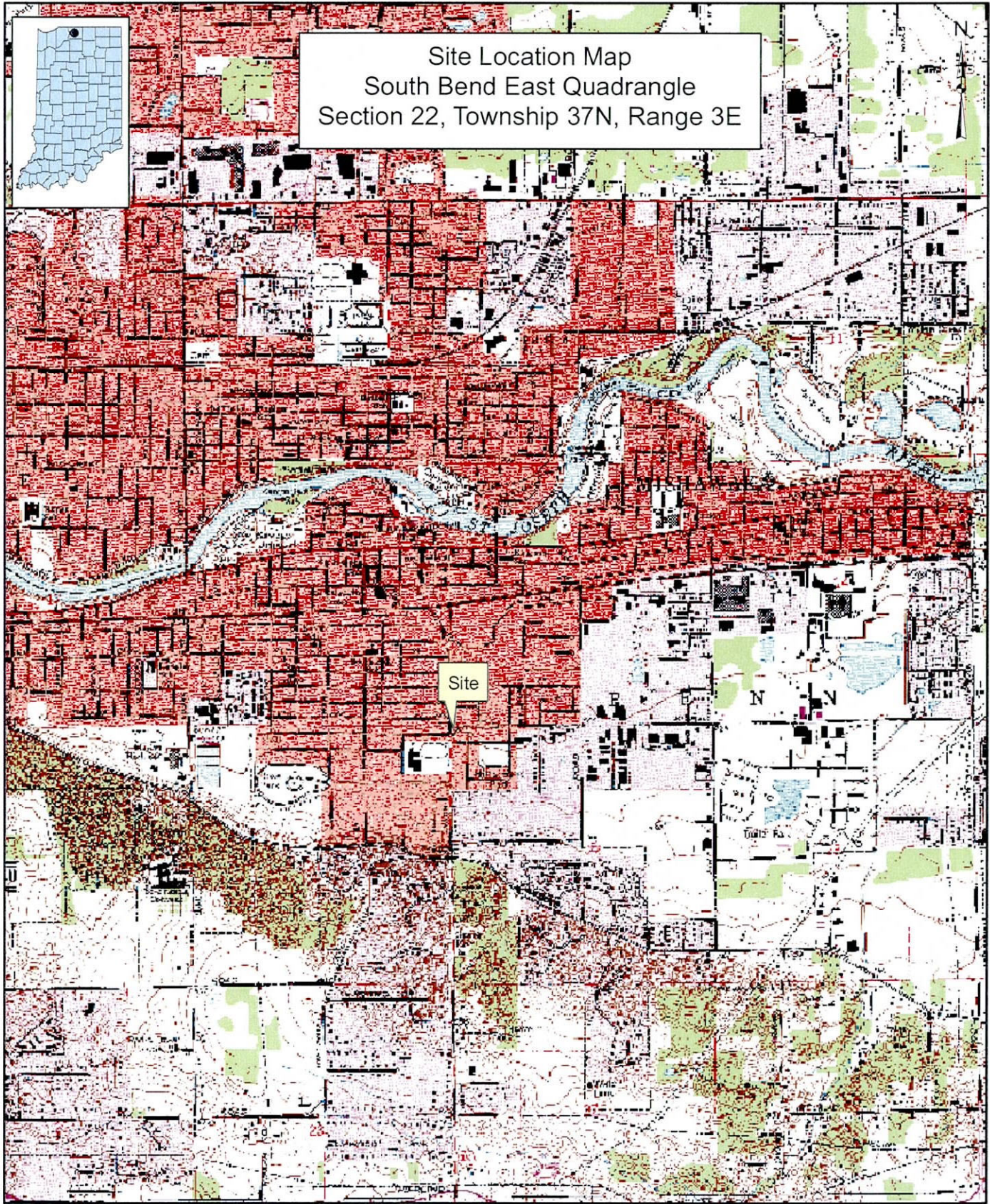


Nivas R. Vijay
Project Manager



Brent A. Dayharsh, LPG
Director of Technical Operations





Site Location Map
 South Bend East Quadrangle
 Section 22, Township 37N, Range 3E

Site

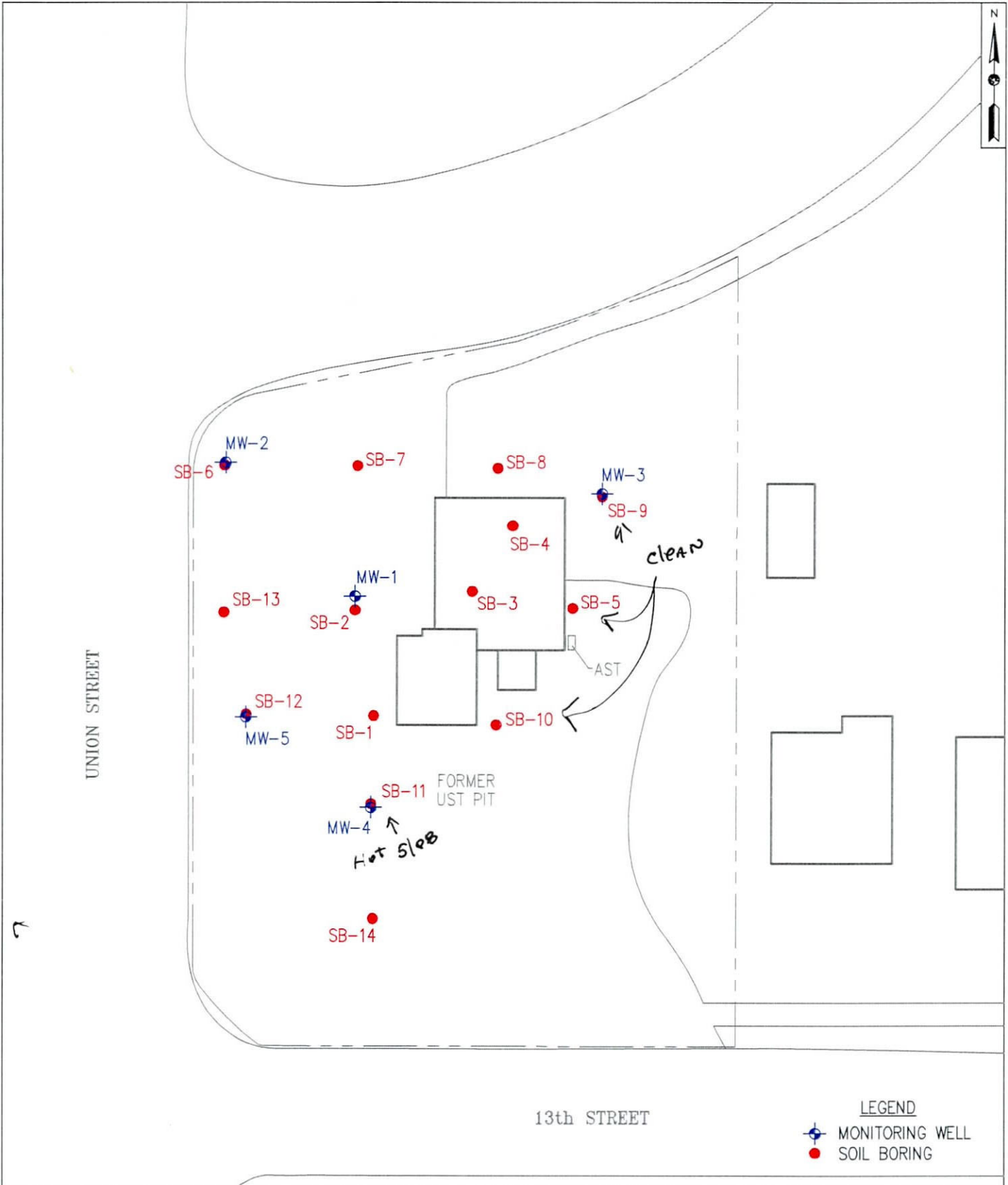
Base Map: 2005 Statewide Natural Color Aerial Photo

FIGURE 1
 SITE MAP

FORMER UNION STREET SUNOCO
 1126 SOUTH UNION STREET
 MISHAWAKA, INDIANA

Project Number: 07-01-05	Date: 5/9/08
Drawn By: CWH	Scale: 1"=100'
Checked By: NRV	Sheet: 1

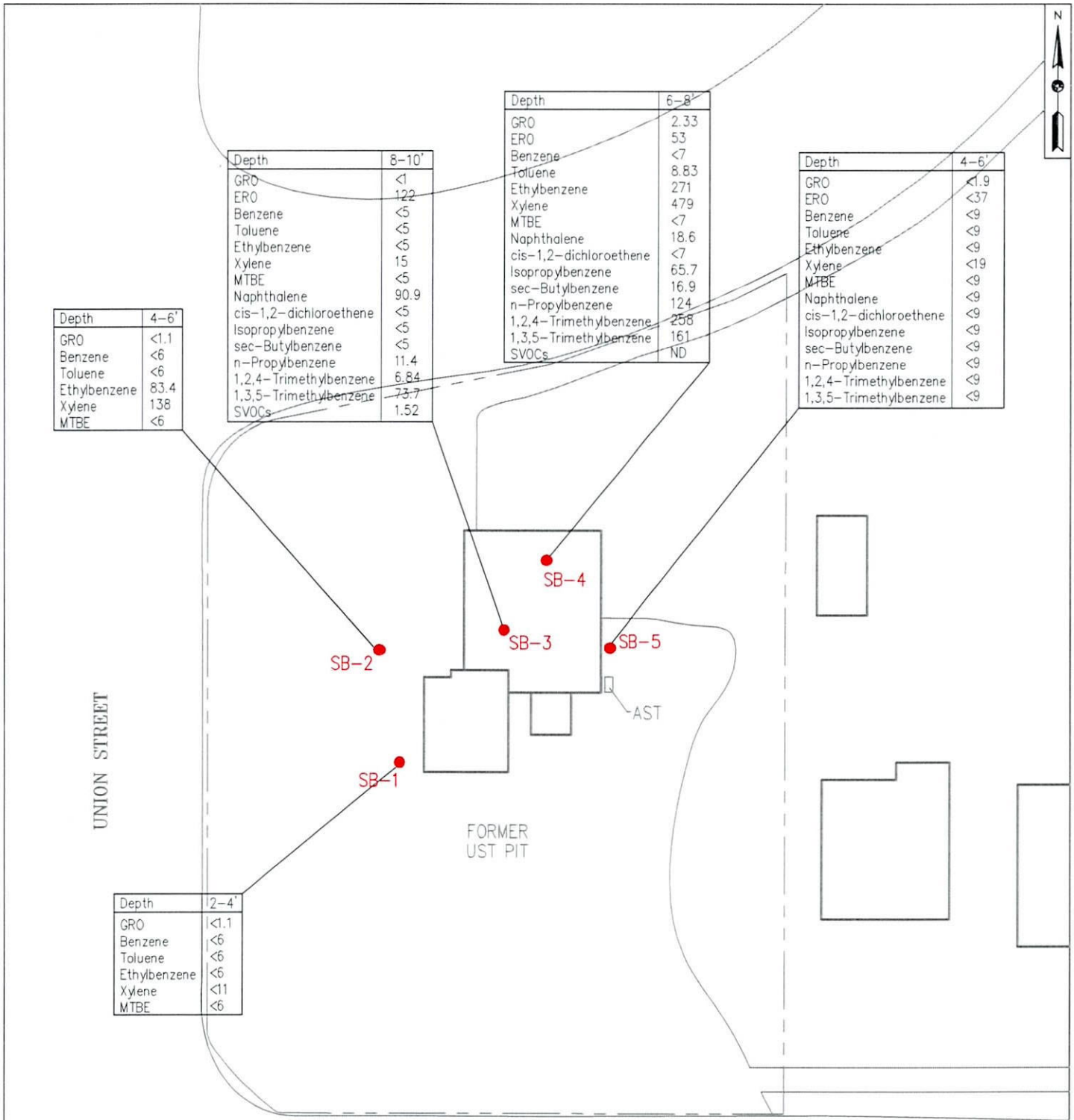




Qepi QUALITY ENVIRONMENTAL PROFESSIONALS, INC.
 1611 South Franklin Road
 Indianapolis, Indiana 46239

FIGURE 2
 SITE MAP
 FORMER UNION STREET SUNOCO
 1126 SOUTH UNION STREET
 MISHAWAKA, INDIANA

PROJECT NO.	DATE
07-01-05	5/9/08
DRAWN BY	SCALE
CWH	1" = 30'
CHECKED BY	SHEET
NRV	1



NOTES:
 TPH RESULTS IN PARTS PER MILLION, ALL OTHERS IN PARTS PER BILLIONS
 SAMPLES COLLECTED 4/13/07.
 ND = NON-DETECT

13th STREET

LEGEND

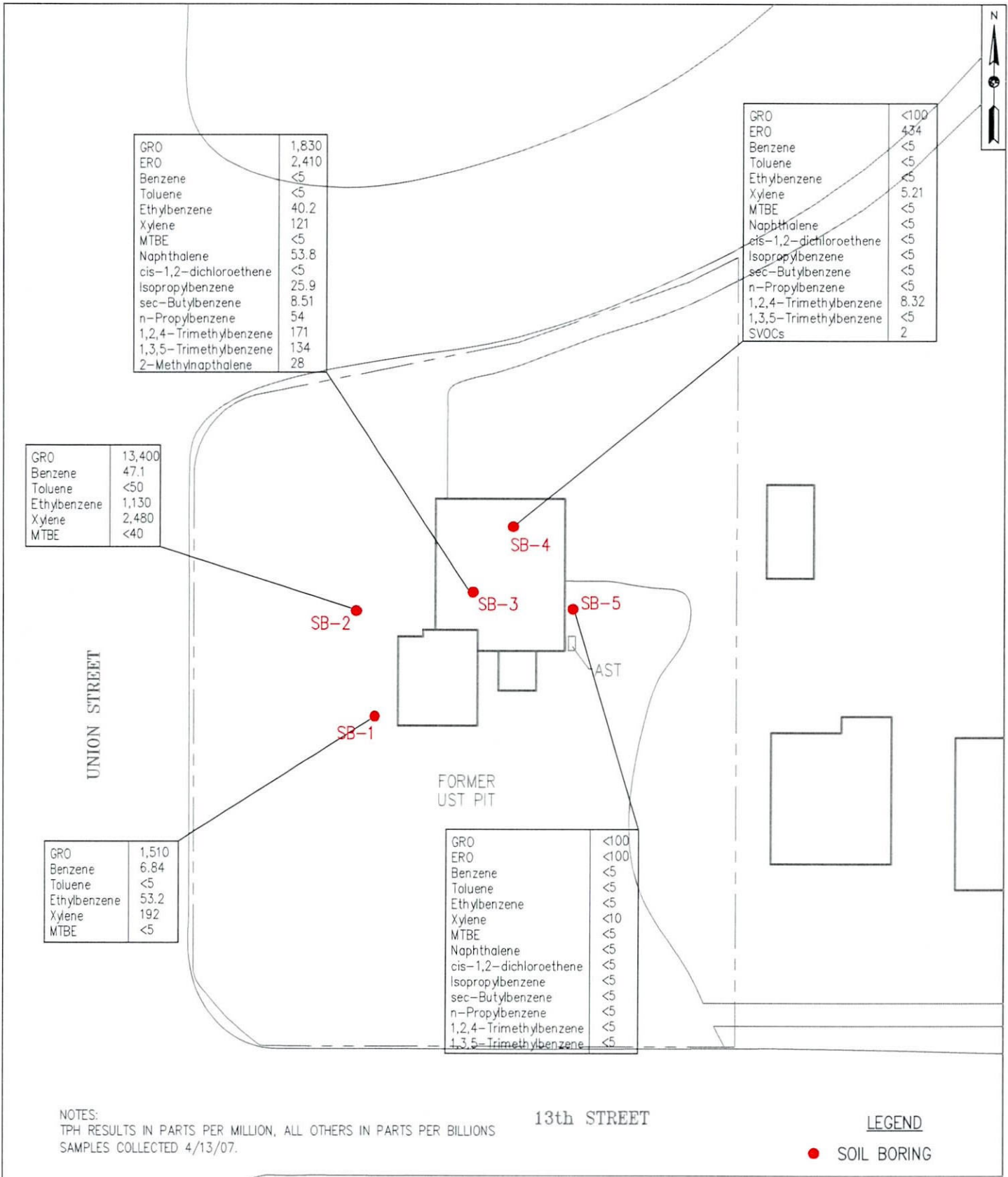
● SOIL BORING

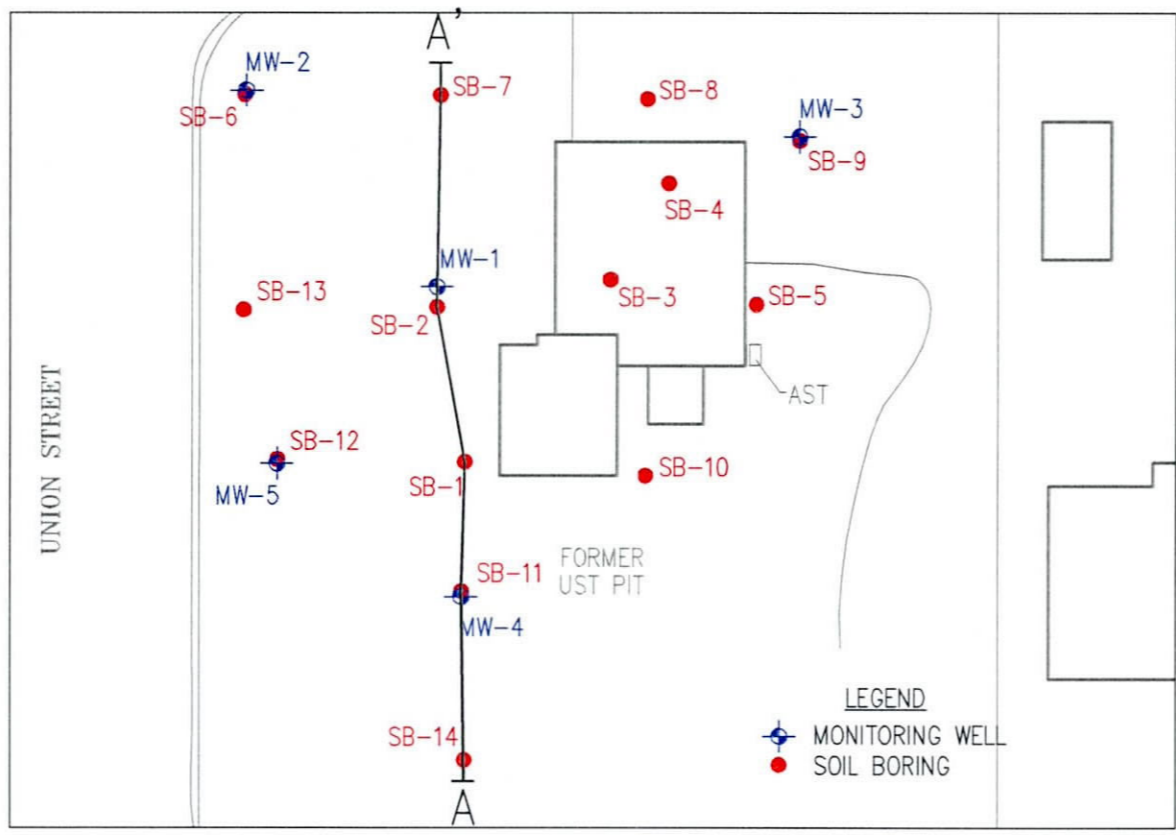
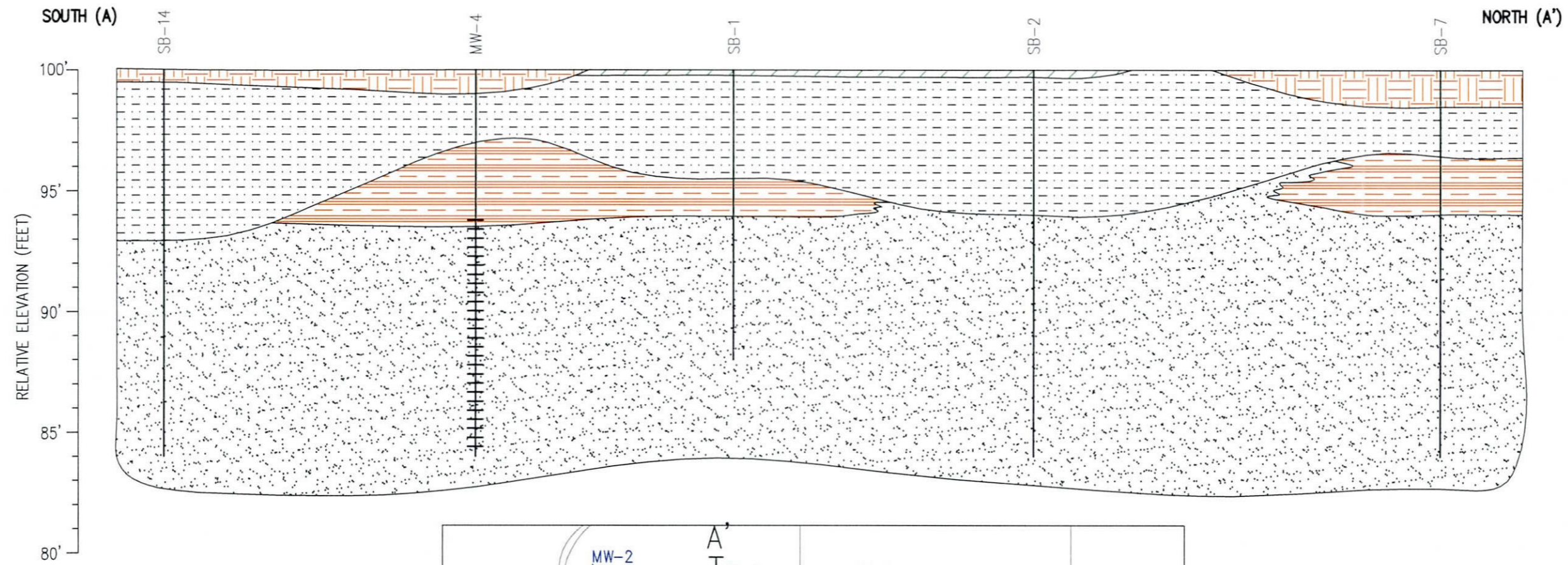


FIGURE 3
 HISTORICAL SOIL ANALYTICAL RESULTS

FORMER UNION STREET SUNOCO
 1126 SOUTH UNION STREET
 MISHAWAKA, INDIANA

PROJECT NO.	DATE
07-01-05	5/9/08
DRAWN BY	SCALE
CWH	1"=30'
CHECKED BY	SHEET
NRV	1





- LEGEND**
- SAND
 - SAND FILL/SANDY LOAM FILL
 - LOAMY TOPSOIL
 - CLAY LOAM
 - SILT LOAM
 - ASPHALT
 - CONCRETE/CONCRETE DEBRIS
 - SCREEN

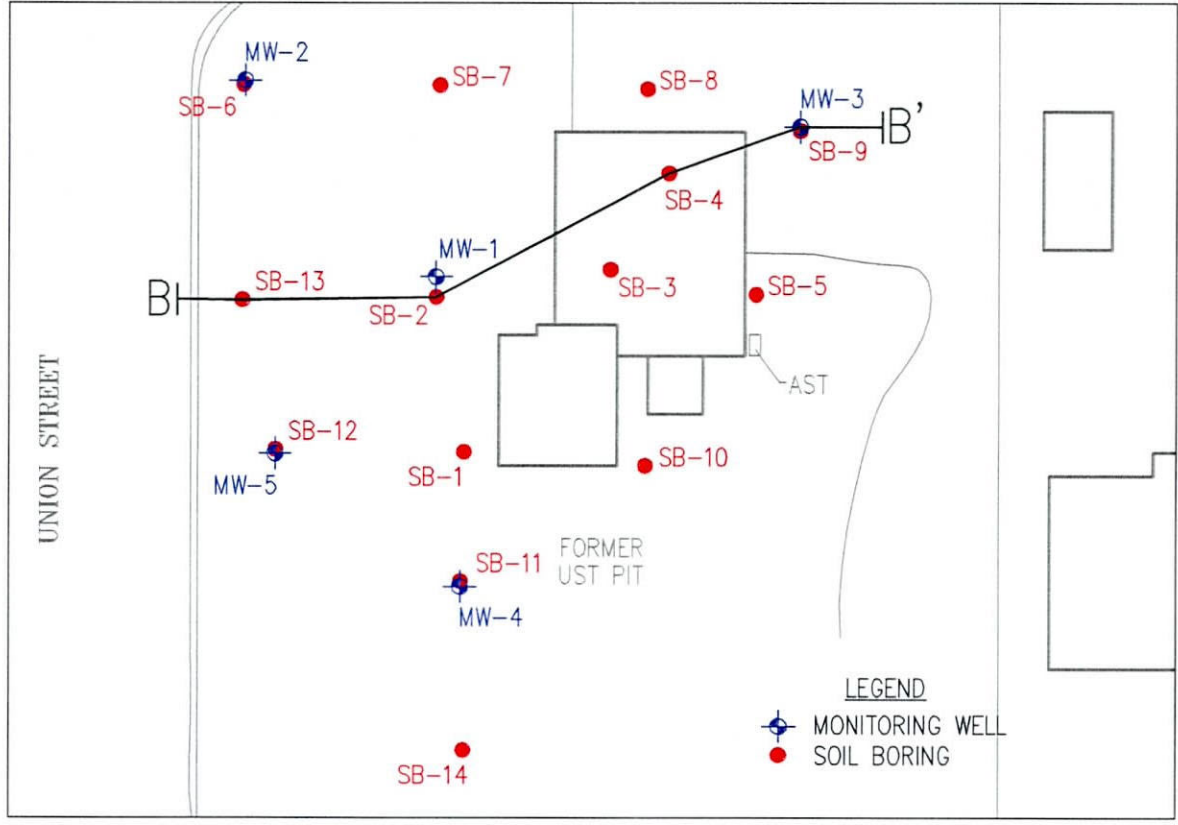
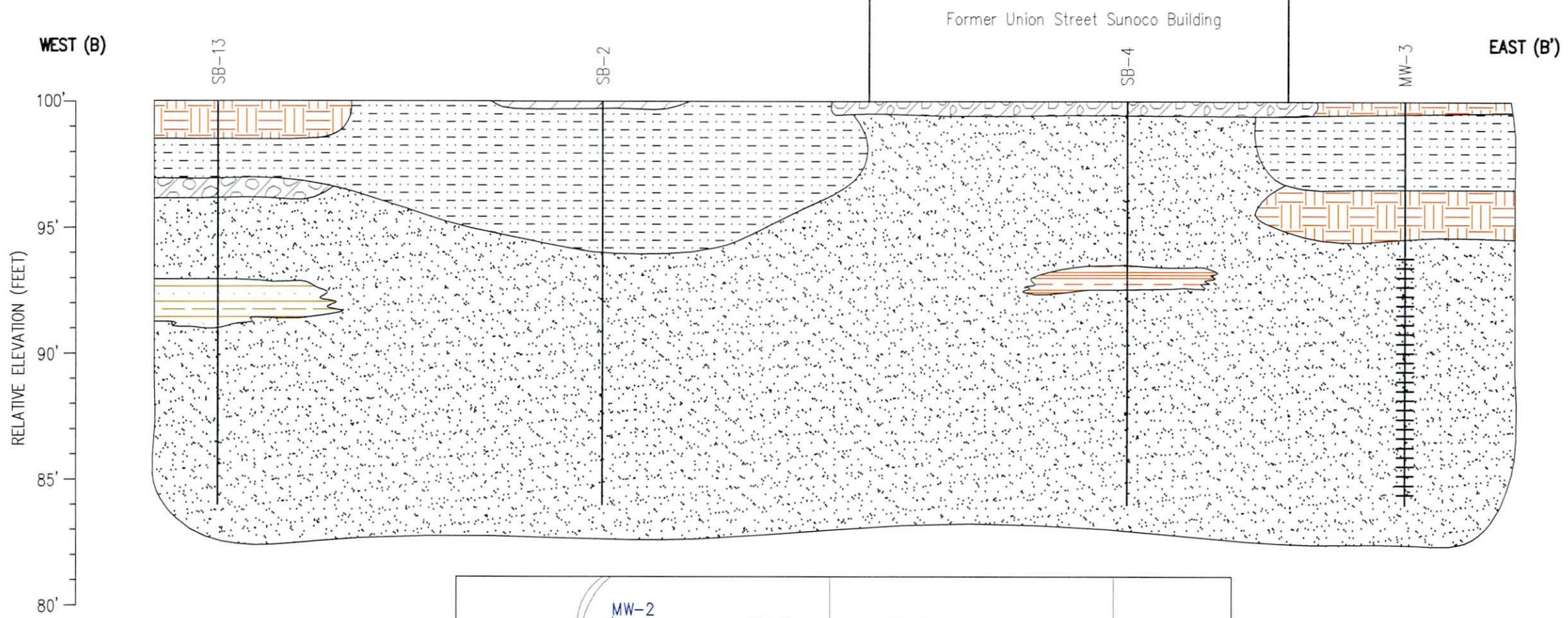
SCALE:
 1"=2' VERTICAL
 1"=10' HORIZONTAL



FIGURE 5A
 GEOLOGIC CROSS-SECTION
 SOUTH (A) - NORTH (A')

FORMER UNION STREET SUNOCO
 1126 SOUTH UNION STREET
 MISHAWAKA, INDIANA

PROJECT NO.	DATE
07-01-05	5/8/08
DRAWN BY	SCALE
CWH	AS NOTED
CHECKED BY	SHEET
NRV	1



- LEGEND**
- SAND
 - SAND FILL/SANDY LOAM FILL
 - LOAMY TOPSOIL
 - CLAY LOAM
 - SILT LOAM
 - ASPHALT
 - CONCRETE/CONCRETE DEBRIS
 - SCREEN

- LEGEND**
- MONITORING WELL
 - SOIL BORING

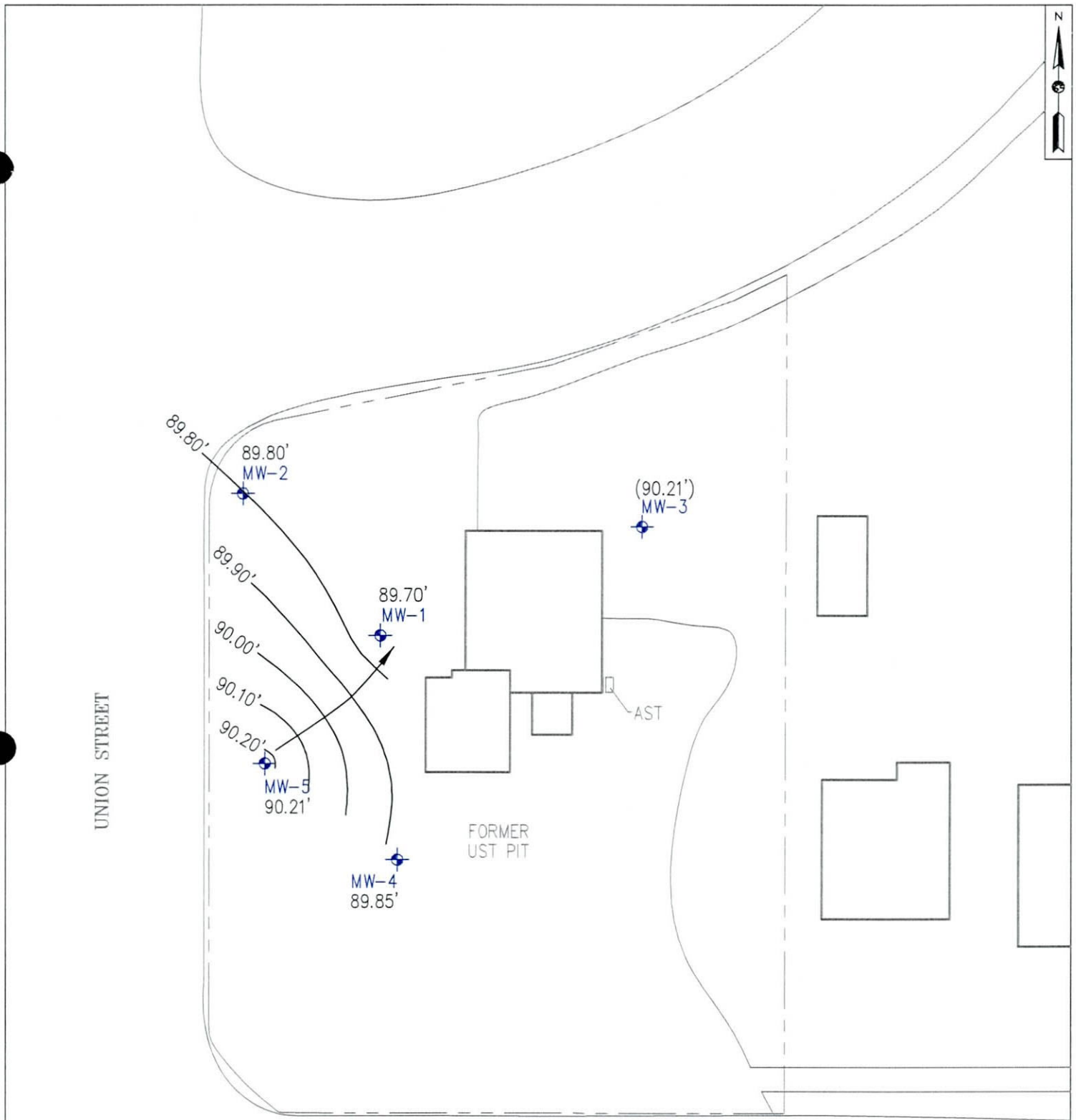
SCALE:
1"=2' VERTICAL
1"=10' HORIZONTAL



FIGURE 5B
GEOLOGIC CROSS-SECTION
WEST (B) - EAST (B')

FORMER UNION STREET SUNOCO
1126 SOUTH UNION STREET
MISHAWAKA, INDIANA

PROJECT NO.	DATE
07-01-05	5/8/08
DRAWN BY	SCALE
CWH	AS NOTED
CHECKED BY	SHEET
NRV	1



LEGEND


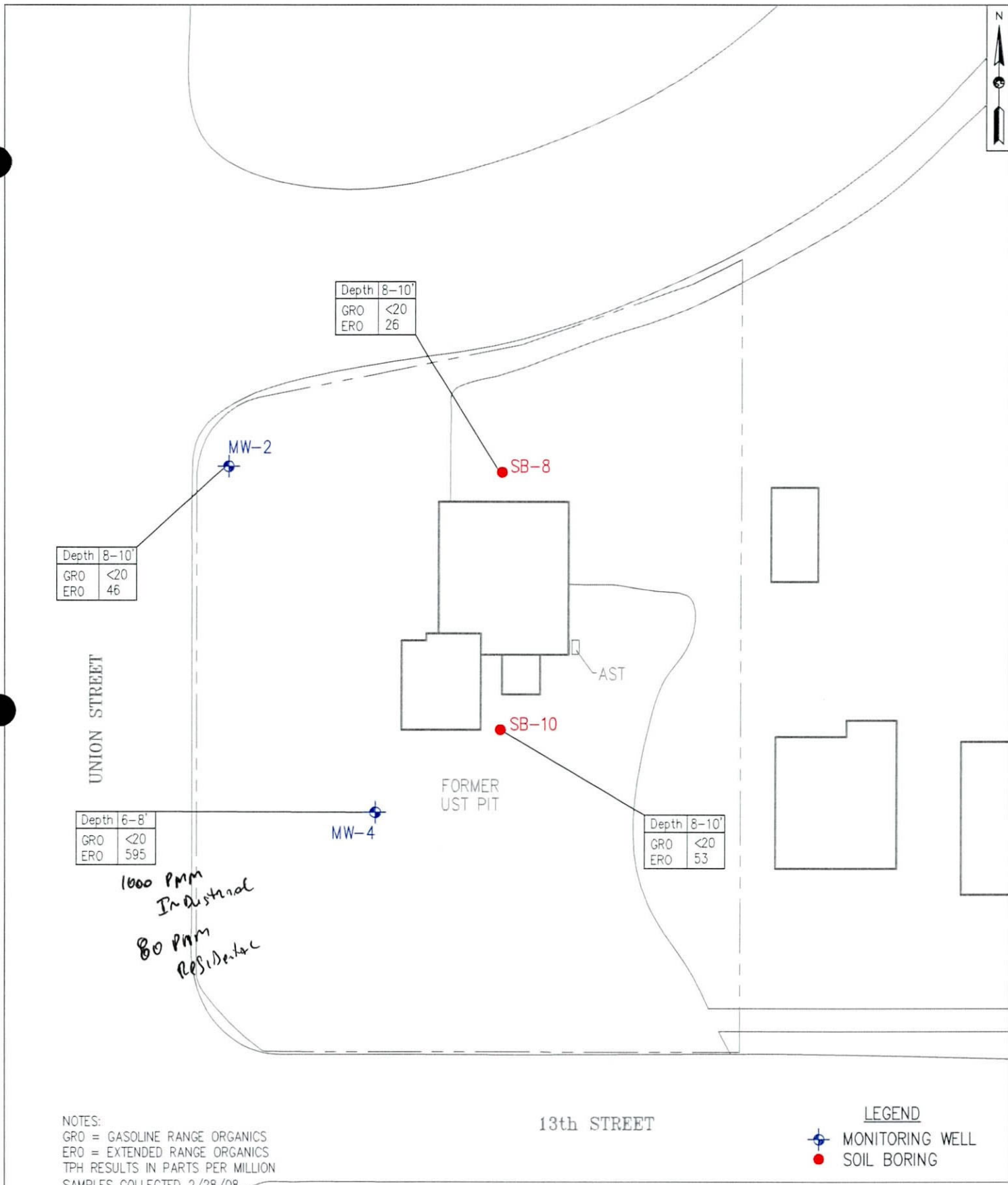
-  GROUNDWATER CONTOUR
-  90.21' GROUNDWATER ELEVATION MONITORING WELL

FIGURE 6
GROUNDWATER FLOW MAP
3/25/08
FORMER UNION STREET SUNOCO
1126 SOUTH UNION STREET
MISHAWAKA, INDIANA

PROJECT NO. 07-01-05	DATE 5/9/08
DRAWN BY CWH	SCALE 1"=30'
CHECKED BY NRV	SHEET 1



NOTES:
 GRO = GASOLINE RANGE ORGANICS
 ERO = EXTENDED RANGE ORGANICS
 TPH RESULTS IN PARTS PER MILLION
 SAMPLES COLLECTED 2/28/08.

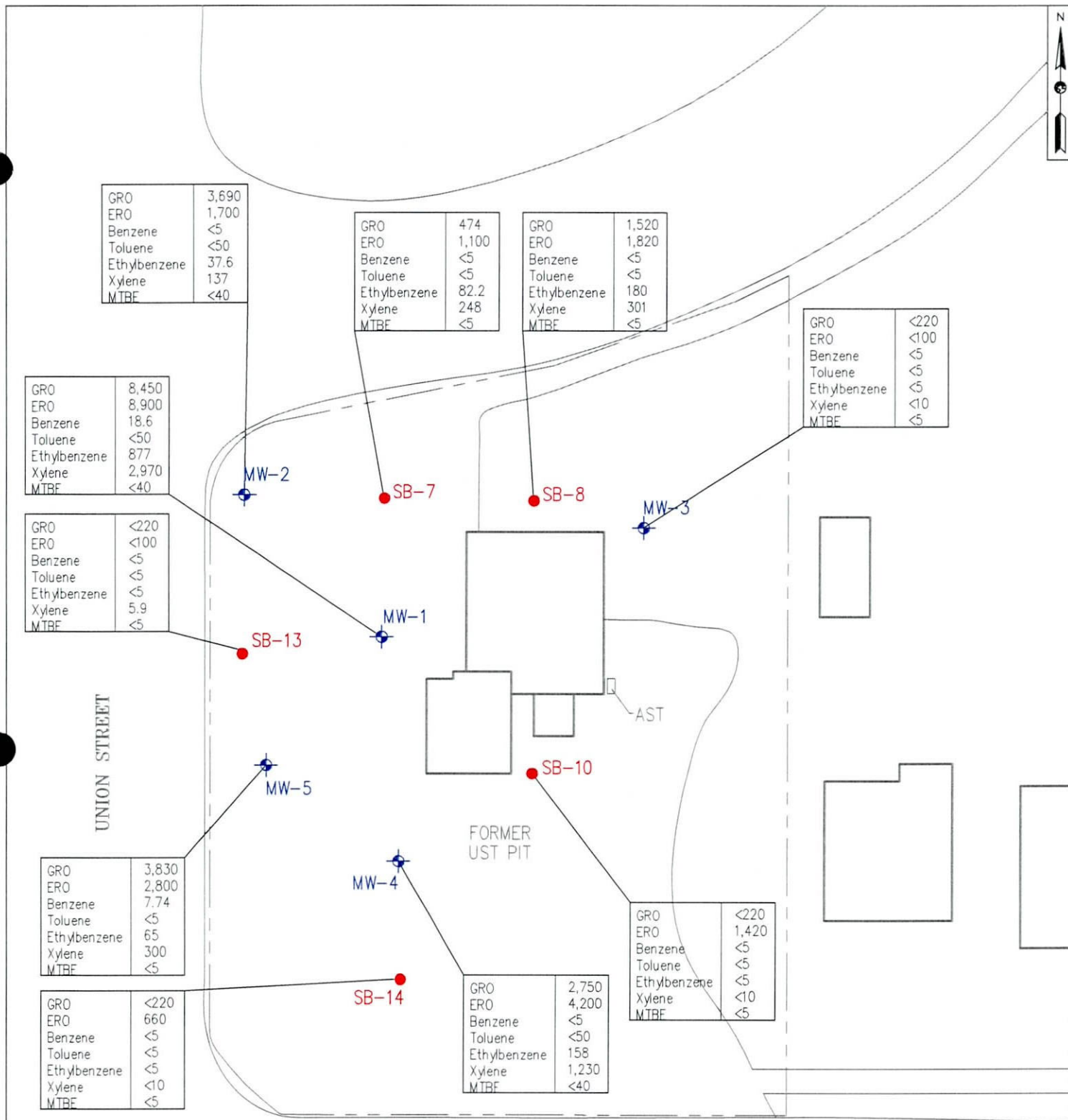
13th STREET

LEGEND
 MONITORING WELL
 SOIL BORING



FIGURE 7
 SOIL ANALYTICAL RESULTS
 FORMER UNION STREET SUNOCO
 1126 SOUTH UNION STREET
 MISHAWAKA, INDIANA

PROJECT NO. 07-01-05	DATE 5/9/08
DRAWN BY CWH	SCALE 1"=30'
CHECKED BY NRV	SHEET 1



NOTES:
 GRO = GASOLINE RANGE ORGANICS
 ERO = EXTENDED RANGE ORGANICS
 TPH RESULTS IN PARTS PER MILLION
 BTEX/MTBE IN PARTS PER BILLION
 SB-7, SB-8, SB-10, SB-13, SB-14 SAMPLES COLLECTED 2/28-29/08
 MW-1 THROUGH MW-5 SAMPLES COLLECTED 3/25/08.

13th STREET

LEGEND
 MONITORING WELL
 SOIL BORING



FIGURE 8
WATER ANALYTICAL RESULTS
 FORMER UNION STREET SUNOCO
 1126 SOUTH UNION STREET
 MISHAWAKA, INDIANA

PROJECT NO.	DATE
07-01-05	5/9/08
DRAWN BY	SCALE
CWH	1"=30'
CHECKED BY	SHEET
NRV	1

TABLES

Table 1 Chemicals of Concern Former Union Street Sunoco Station 1126 South Union Street Mishawaka, Indiana		
Chemicals of Concern	Analytical Method Used	
	Soil	Water
BTEX/MTBE	8260	8260
TPH GRO/ERO	8015	8015
Analyzed using USEPA SW-846 BTEX/MTBE = Benzene, Toluene, Ethylbenzene, Xylene, Methyl-tertiary-butyl Ether TPH GRO = Total Petroleum Hydrocarbons Gasoline Range Organics TPH ERO = Total Petroleum Hydrocarbons Extended Range Organics		

Table 2A
Soil Sample VOCs Analytical Results
Former Union Street Sunoco
1126 South Union Street
Mishawaka, Indiana

Sample I.D.	Date	Sample Depth (ft)	TPH Gasoline Range	TPH Extended Range	Benzene	Toluene	Ethylbenzene	Total Xylene	MTBE	Napthalene	cis-1,2-dichloroethene	Isopropylbenzene (Cumene)	sec-Butylbenzene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	SVOCs
			(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
SB-1	4/13/2007	2-4	<1.1	NA	<6	<6	<6	<11	<6	NA	NA	NA	NA	NA	NA	NA	NA
SB-2	4/13/2007	4-6	<1.1	NA	<6	<6	83.4	138	<6	NA	NA	NA	NA	NA	NA	NA	NA
SB-3	4/13/2007	8-10	<1.0	122	<5	<5	<5	15	<5	90.9	<5	<5	<5	11.4	6.84	73.7	1.52
SB-4	4/13/2007	6-8	2.33	53	<7	8.83	271	479	<7	18.6	<7	65.7	16.9	124	258	161	ND
SB-5	4/13/2007	4-6	<1.9	<37	<9	<9	<9	<19	<9	<9	<9	<9	<9	<9	<9	<9	NA
RISC Default Residential			25	80	34	13,000	12,000	170,000	180	700	400	-	-	-	2,500	610	-
RISC Default Industrial			330	1,000	350	160,000	240,000	170,000	3,900	170,000	5,800	-	-	-	170,000	68,000	-

Laboratory analysis by ENVision Laboratories, Inc. Indianapolis, Indiana

Results in **bold** exceed IDEM RISC Default Residential Cleanup Goals (January 2004 guidance)

Results Shaded exceed IDEM RISC Default Industrial Cleanup Objectives (January 2004 guidance).

NA = Parameter not analyzed; ND = None Detected

< = result is less than laboratory detection limit

ppb = parts per billion

ppm = parts per million

**Table 2B
Metals in Soil
Former Union Street Sunoco
1126 South Union Street
Mishawaka, Indiana**

Sample Location	Date Sampled	Sample Depth (feet)	Arsenic	Barium	Cadmium	Chromium III	Lead	Mercury	Selenium	Silver
SB-3	4/13/2007	8-10	<2	<2	<2	<2	5.1	<1	<2	<2
SB-4	4/13/2007	6-8	<3	32	<3	4.4	6.9	<1	<3	<3
RISC Default Residential closure levels			3.9	1,600	7.5	10,000	81	2	5	31
RISC Default Industrial closure levels			5.8	5,900	77	10,000	230	32	53	87

Notes: Values presented in parts per million (ppm) or mg/kg

Constituents not listed were below the laboratory detection limit

Default Closure levels based on RISC Technical Users Guide, Updated 01/31/06. Amended August 2006.

Bold cell denotes value exceeds RISC Default Residential closure level

Shaded cell denotes value exceeds RISC Default Industrial closure level

Table 2C
PCBs in Soil
Former Union Street Sunoco
1126 South Union Street
Mishawaka, Indiana

Sample Location	Date Sampled	Sample Depth (feet)	PCB-1016 (Aroclor 1016)	PCB-1221 (Aroclor 1221)	PCB-1232 (Aroclor 1232)	PCB-1242 (Aroclor 1242)	PCB-1248 (Aroclor 1248)	PCB-1254 (Aroclor 1254)	PCB-1260 (Aroclor 1260)
SB-3	4/13/2007	8-10	<82.5	<82.5	<82.5	<82.5	<82.5	<165	<165
SB-4	4/13/2007	6-8	<111.1	<111.1	<111.1	<111.1	<111.1	<222	<222
RISC Default Residential closure			1,800	1,800	1,800	1,800	1,800	1,800	1,800
RISC Default Industrial closure			5,300	5,300	5,300	5,300	5,300	5,300	5,300
<p>Notes: Values presented in parts per billion (ppb) or ug/kg Constituents not listed were below the laboratory detection limit Default Closure levels based on RISC Technical Users Guide, Updated 01/31/06. Amended August 2006. Bold cell denotes value exceeds RISC Default Residential closure level Shaded cell denotes value exceeds RISC Default Industrial closure level</p>									

Table 3A Groundwater VOCs Analytical Results Former Union Street Sunoco 1126 South Union Street Mishawaka, Indiana																
Sample I.D.	Date	IPH Gasoline Range	IPH Extended Range	Benzene	Toluene	Ethylbenzene	Total Xylene	MIBE	Napthalene	cis-1,2-dichloroethene	Isopropylbenzene (Cumene)	sec-Butylbenzene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Methylnapthalene
		(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
SB-1	4/13/2007	1,510	NA	6.84	<5	53.2	192	<5	NA	NA	NA	NA	NA	NA	NA	NA
SB-2	4/13/2007	13,400	NA	47.1	<50	1,130	2,480	<40	NA	NA	NA	NA	NA	NA	NA	NA
SB-3	4/13/2007	1,830	2,410	<5	<5	40.2	121	<5	53.8	<5	25.9	8.51	54	171	134	28
SB-4	4/13/2007	<100	434	<5	<5	<5	5.21	<5	2.0	<5	<5	<5	<5	8.32	<5	2
SB-5	4/13/2007	<100	<100	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	NA
RISC Default Residential Cleanup Objective		220	80	5	1,000	700	10,000	40	8.3	70	830.0	-	-	16.0	16.0	31
RISC Default Industrial Cleanup Objective		3,000	1,100	52	20,000	10,000	20,000	870	170	1,000	10,000.0	-	-	5,100	5,100	410
Laboratory analysis by ENVision Laboratories, Inc. Indianapolis, Indiana Results in bold exceed IDEM RISC Default Residential Cleanup Goals (January 2004 guidance) Results Shaded exceed IDEM RISC Default Industrial Cleanup Objectives (January 2004 guidance). NA = Parameter not analyzed ND = None Detected < = result is less than laboratory detection limit ppb = parts per billion ppm = parts per million																

Table 3B
Metals in Groundwater
Former Union Street Sunoco
1126 South Union Street
Mishawaka, Indiana

Sample Location	Date Sampled	Arsenic	Barium	Cadmium	Chromium III	Lead	Mercury	Selenium	Silver
SB-3	4/13/2007	<0.01	<0.01	<0.005	<0.01	<0.01	<0.002	<0.01	<0.05
SB-4	4/13/2007	<0.01	<0.01	<0.005	<0.01	<0.01	<0.002	<0.01	<0.05
RISC Default Residential closure levels		0.01	2.0	0.005	0.1	0.015	0.002	0.05	0.05
RISC Default Industrial closure levels		0.01	7.2	0.051	150	0.042	0.031	0.51	0.50

Notes: All values presented in parts per million (ppm) or mg/l except Thallium, which is presented in parts per billion (ppb)

Constituents not listed were below the laboratory detection limit

Default Closure levels based on RISC Technical Users Guide, Updated 01/31/06. Amended August 2006.

Bold cell denotes value exceeds RISC Default Residential closure level

Shaded cell denotes value exceeds RISC Default Industrial closure level

Table 3C
PCBs in Groundwater
Former Union Street Sunoco
1126 South Union Street
Mishawaka, Indiana

Sample Location	Date Sampled	PCB-1016 (Aroclor 1016)	PCB-1221 (Aroclor 1221)	PCB-1232 (Aroclor 1232)	PCB-1242 (Aroclor 1242)	PCB-1248 (Aroclor 1248)	PCB-1254 (Aroclor 1254)	PCB-1260 (Aroclor 1260)
SB-3	4/13/2007	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
SB-4	4/13/2007	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
RISC Default Residential closure levels		0.5	0.5	0.5	0.5	0.5	0.5	0.5
RISC Default Industrial closure levels		1.4	1.4	1.4	1.4	1.4	1.4	1.4
<p>Notes: Values presented in parts per billion (ppb) or ug/l Constituents not listed were below the laboratory detection limit Default Closure levels based on RISC Technical Users Guide, Updated 01/31/06 Bold cell denotes value exceeds RISC Default Residential closure level Shaded cell denotes value exceeds RISC Default Industrial closure level</p>								

Table 4
PID Field Screening Readings
Former Union Street Sunoco Station
1126 South Union Street
Mishawaka, Indiana

Depth (feet)	SB-6/MW-2	SB-7	SB-8	SB-9/MW-3	SB-10	SB-11/MW-4	SB-12/MW-5	SB-13	SB-14
0-2	0.1	0.0	0.0	0.0	2.3	0.1	0.1	0.4	0.0
2-4	12.1	6.2	0.0	0.1	0.1	0.8	2.4	16.1	16.4
4-6	66.8	65.3	45.5	0.4	85.3	90.1	155.7	53.9	18.3
6-8	185.3	92.3	39.7	0.2	179.1	361.7	69.7	82.0	44.8
8-10	954.8	129.7	101.8	0.0	272.1	271.5	83.2	572.7	151.3
10-12	781.7	425.1	150.4	0.0	86.9	323.1	165.9	867.1	148.3
12-14	317.4	203.4	439.1	0.0	29.2	452.7	235.1	39.5	46.0
14-16	19.3	56.1	43.4	0.0	9.0	111.9	0.7	0.9	17.5

Bold indicates samples submitted for laboratory analysis

DNE indicates Depth Not Evaluated

Table 5 Soil Sample Analytical Results Former Union Street Sunoco Station 1126 South Union Street Mishawaka, Indiana					
Sample I.D.	Date	Sample Depth (feet)	TPH Gasoline Range	TPH Diesel Range	% Moisture
			(ppm)	(ppm)	%
SB-6	2/28/2008	8'-10'	<20	46	3.0
SB-8	2/28/2008	8'-10'	<20	26	3.0
SB-10	2/29/2008	8'-10'	<20	53	4.0
SB-11	2/28/2008	6'-8'	<20	595	24.0
RISC Default Residential Cleanup			25	80	-
RISC Default Industrial Cleanup			330	1,000	-
Samples analyzed by ENVision Laboratories, Inc. Indianapolis, Indiana Results in bold exceed IDEM RISC Default Residential Results Shaded exceed IDEM RISC Default Industrial < = result is less than laboratory detection limit ppb = parts per billion ppm = parts per million					

Table 6
Water Sample Analytical Results
Former Union Street Sunoco Station
1126 South Union Street
Mishawaka, Indiana

Sample I.D.	Date	TPH Gasoline Range	TPH Extended Range	Benzene	Toluene	Ethylbenzene	Total Xylene	MTBE	Napthalene	n-Propylbenzene	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
		(ppb)		(ppb)									
SB-7	2/28/2008	474	1,100	<5	<5	82.2	248	<5	69	35	<5	209	56.9
SB-8	2/28/2008	1,520	1,820	<5	<5	180	301	<5	231	73.8	<5	392	140
SB-10	2/29/2008	<220	1,420	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
SB-13	2/28/2008	<220	<100	<5	<5	<5	5.9	<5	<5	<5	<5	6.89	<5
SB-14	2/29/2008	<220	660	<5	<5	<5	<10	<5	<5	9.3	<5	32.8	13.2
MW-1	3/25/2008	8,450	8,900	18.6	<50	877	2,970	<40	NS	NS	NS	NS	NS
SB-6/MW-2	3/25/2008	3,690	1,700	<5	<50	37.6	137	<40	NS	NS	NS	NS	NS
SB-9/MW-3	3/25/2008	<220	<100	<5	<5	<5	<10	<5	NS	NS	NS	NS	NS
SB-11/MW-4	3/25/2008	2,750	4,200	<5	<50	158	1,230	<40	NS	NS	NS	NS	NS
SB-12/MW-5	3/25/2008	3,830	2,800	7.74	<5	65.0	300	<5	NS	NS	NS	NS	NS
RISC Default Residential Cleanup Objective		220	100	5	1,000	700	10,000	40	8.3	310	-	16	16
RISC Default Industrial Cleanup Objective		3,000	1,100	52	8,200	10,000	20,000	720	2,000	4,100	-	5,100	5,100

Samples were collected by Qepi and analyzed by ENVision Laboratories, Inc. Indianapolis, Indiana
 Results in **bold** exceed IDEM RISC Default Residential Cleanup Objectives (January 2006 guidance).
 Results Shaded exceed IDEM RISC Default Industrial Cleanup Objectives (January 2006 guidance).
 NS - Not Sampled
 ppb = parts per billion
 ppm = parts per million

(GAS)
TPH-GRO
TPH-ERO
(DIESEL)
Over Industrial
Levels

OVER
Industrial
Levels

APPENDIX A



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road
Indianapolis, Indiana

LOG OF: **MW-1**
(1 of 1)

Project Number **07-01-05**

Client: City of Mishawaka		Drilling Method:	
Project: Former Union Street Sunoco		Sampling Method:	
Location: 1126 South Union Street, Mishawaka, Indiana		Elevation:	
Logged By: NRV		Time Terminated: 09:45	Weather: 25°F, sunny
Drilling Company: Midway	Drillers: Mark, Jeff, JR	Completion Date: February 28, 2008	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM
0					0	<p>Surface Casing Bentonite Seal #5 Quartz Sand Pack 2" PVC Sch 40 0.010" slot</p>
2					2	
4					4	
6					6	
8					8	
10					10	
12					12	

WELL LOG 07-01-05.GPJ WELL LOG.GDT 5/14/08



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road
Indianapolis, Indiana

LOG OF: **SB-6/MW-2**
(1 of 1)

Project Number **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana	Elevation:
Logged By: NRV	Time Terminated: 11:45 Weather: 25°F, sunny
Drilling Company: Midway Drillers: Mark, Jeff	Completion Date: February 28, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM
0.1	10YR 3/2 very dark grayish brown, LOAMY topsoil with gravel, organics				0.1	Surface Casing
2	10YR 4/3 brown, gravelly SAND, wet				2	Bentonite Seal
4	10YR 3/2 very dark grayish brown, SANDY CLAY LOAM organics, firm, plastic, moist				12.1	
6	10YR 4/3 brown, fine to medium grained SAND with gravel, moist				66.8	
8	10YR 4/1 dark grey, fine to medium grained SAND with gravel, very moist, petro. odor				105.3	
10			Soil sample from 8'-10' submitted for laboratory analysis		954.8	#5 Quartz Sand Pack
11	Saturated at 11'				781.7	2" PVC Sch 40 0.010" slot
14	10YR 4/1 dark grey, medium to coarse SAND with gravel, saturated				317.4	
16	10YR 4/3 brown, medium to coarse SAND with gravel, saturated				19.3	
16	Boring terminated at 16 ft					

WELL LOG 07-01-05.GPJ WELL LOG.GDT 5/14/08



Project Number: **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana	Weather: 25°F, sunny
Logged By: NRV	Time Terminated: 15:10
Drilling Company: Midway	Drillers: Mark, Jeff
	Completion Date: February 28, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
0	10YR 3/2 very dark grayish brown, LOAMY TOPSOIL, organics			0.0	0
2	10YR 4/3 brown, fine grain SAND fill with gravel			6.2	2
4	10YR 3/2 very dark grayish brown, SANDY CLAY LOAM, firm, plastic, gravel, moist			65.3	4
6	10 YR 4/1 dark gray, fine to medium grain SAND, wet			92.3	6
8				129.7	8
10				425.1	10
11	Saturated at 11'		Ground Water Sample at 15:40		
12	10YR 4/1 dark gray, medium to coarse grain SAND, gravel			203.4	12
14	10YR 4/2 dark grayish brown, fine to medium grain SAND, gravel, saturated			56.1	14
16	10YR 4/3 brown, medium to coarse grain SAND, gravel, saturated				16
	Bottom of Boring at 16 ft				



Project Number: **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana	Weather: 25°F, sunny
Logged By: NRV	Time Terminated: 14:25
Drilling Company: Midway	Drillers: Mark, Jeff, JR, Zack
Completion Date: February 28, 2008	

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	10YR 3/2 very dark grayish brown, LOAMY TOPSOIL, organics			0.0	0
- 2	10YR 4/3 brown, fine grain SAND fill			0.0	2
- 4	10 YR 4/2 dark grayish brown, fine to medium grain SAND, moist			45.5	4
0	10YR 3/1 very dark gray, SANDY CLAY LOAM, organics, firm, moist, plastic			45.5	6
	10YR 4/1 dark gray, fine to medium grain SAND, gravel, very moist			39.7	6
- 8				101.8	8
- 10			Soil sampled from 8'-10' at 14:30 submitted for laboratory analysis	101.8	10
- 12	Saturated at 11'		Ground water sample taken at 14:45	150.4	12
- 14	10YR 4/1 dark gray, medium to coarse SAND, gravel, saturated			439.1	14
- 14	10YR 4/3 brown, medium to coarse SAND, gravel, saturated			43.4	14
- 16	Bottom of Boring at 16 ft				16



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road
Indianapolis, Indiana

LOG OF: **SB-9/MW-3**
(1 of 1)

Project Number: **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana	Elevation:
Logged By: NRV	Time Terminated: 11:15 Weather: 25°F, sunny
Drilling Company: Midway Drillers: Mark, Jeff, JR, Zack	Completion Date: February 28, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM
0.0	10YR 3/1 very dark gray, LOAMY TOPSOIL, organics				0.0	Surface Casing
0.5	10YR 4/4 dark yellowish brown, SAND fill, brick debris				0.5	Bentonite Seal
1.0	10YR 4/3 brown, SAND fill, coarse grain, concrete debris, slightly moist				1.0	
1.5	10YR 3/1 very dark gray, LOAMY TOPSOIL, organics, very moist				1.5	
2.0	10YR 4/3 brown, medium to coarse grain SAND, wet				2.0	
2.5	10YR 6/1 gray medium to coarse grain SAND, wet				2.5	
3.0					3.0	
3.5					3.5	
4.0					4.0	
4.5					4.5	
5.0					5.0	
5.5					5.5	
6.0					6.0	
6.5					6.5	
7.0					7.0	
7.5					7.5	
8.0					8.0	
8.5					8.5	
9.0					9.0	
9.5					9.5	
10.0					10.0	#5 Quartz Sand Pack
10.5					10.5	2" PVC Sch 40 0.010" slot
11.0					11.0	
11.5	10YR 6/1 gray fine to medium grain SAND Saturated at 11.5'				11.5	
12.0					12.0	
12.5					12.5	
13.0					13.0	
13.5	10YR 6/2 light brownish gray, medium to coarse grain SAND, gravel, saturated				13.5	
14.0					14.0	
14.5					14.5	
15.0					15.0	
15.5					15.5	
16.0	Boring terminated at 16 ft				16.0	

WELL LOG 07-01-05.GPJ WELL LOG.GDT 5/14/08



Project Number: 07-01-05

Client: City of Mishawaka		Drilling Method: GeoProbe
Project: Former Union Street Sunoco		Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana		Weather: 30°F, cloudy, snow
Logged By: NRV		Time Terminated: 09:25
Drilling Company: Midway	Drillers: Mark, Jeff	Completion Date: February 29, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
	10YR 3/2 very dark grayish brown LOAMY TOPSOIL, organics				
	10YR 4/3 brown fine to medium grain SAND, moist			2.3	2
2				0.1	2
	10YR 3/1 very dark gray SANDY CLAY LOAM, moist, firm, plastic			85.3	4
4					4
	10YR 4/1 dark gray fine to medium grain SAND, very moist, odor			179.1	6
6					6
	Concrete debris		Soil sample from 8'-10' submitted for laboratory analysis	272.1	8
8					8
	10YR 6/1 gray medium grain SAND, gravel, wet, slight odor			86.9	10
10					10
	Saturated at 12'		Ground water sample at 09:45	29.2	12
12					12
	10YR 6/2 light brownish gray medium to coarse grain SAND, gravel, saturated			9.0	14
14					14
	10YR 4/3 brown medium to coarse grain SAND, gravel, saturated				16
16					16
	Bottom of Boring at 16 ft				

BORING LOG 07-01-05.GPJ BORING LOG.GDT 5/14/08



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road
Indianapolis, Indiana

LOG OF: **SB-11/MW-4**
(1 of 1)

Project Number **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana	Elevation:
Logged By: NRV	Time Terminated: 13:55 Weather: 25°F, sunny
Drilling Company: Midway Drillers: Mark, Jeff	Completion Date: February 28, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM
0.1	10YR 4/3 brown LOAMY TOPSOIL, organics				0.1	Surface Casing
2	10YR 4/3 brown SAND fill, gravel				2	Bentonite Seal
4	10YR 3/2 very dark grayish brown SANDY CLAY LOAM, gravel, firm, moist, organic				.08	
6					90.1	
8	10YR 4/1 dark gray fine to medium grain SAND, gravel, very moist, slight odor		soil sample from 6'-8' submitted for laboratory analysis	361.7	6	
10				271.5	10	#5 Quartz Sand Pack
12	saturated at 11'			323.1	12	2" PVC Sch 40 0.010" slot
14				452.7	14	
16	10YR 4/3 medium to coarse grain SAND, gravel, saturated			111.9	16	
16	Boring terminated at 16 ft					

WELL LOG 07-01-05.GPJ WELL LOG.GDT 5/14/08



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road
Indianapolis, Indiana

LOG OF: **SB-12/MW-5**
(1 of 1)

Project Number: **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana	Elevation:
Logged By: NRV	Time Terminated: 12:25 Weather: 25°F, sunny
Drilling Company: Midway Drillers: Mark, Jeff	Completion Date: February 28, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)	WELL DIAGRAM
0.1	10YR 3/1 very dark gray LOAMY TOPSOIL, organics				0.1	Surface Casing
2	10YR 3/3 dark brown SAND fill, asphalt debris				2	
2.4					2.4	Bentonite Seal
4	10YR 3/3 dark brown SANDY CLAY LOAM, organics, very moist, firm, plastic				4	
6	10YR 4/1 dark gray fine to medium grain SAND, very moist, slight odor			155.7	6	
8				69.7	8	
10				83.2	10	
12	10YR 4/1 dark gray mottled 10YR 4/3 brown, fine to medium grain SAND, gravel, wet Saturated at 12.5'			165.9	12	#5 Quartz Sand Pack 2" PVC Sch 40 0.010" Slot
14				235.1	14	
16	10YR 4/3 brown medium to coarse grain SAND, gravel, wet			0.7	16	
16	Boring terminated at 16 ft				16	
18					18	

WELL LOG 07-01-05.GPJ WELL LOG.GDT 5/14/08



QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

1611 South Franklin Road
Indianapolis, Indiana

Project Number: **07-01-05**

Client: City of Mishawaka		Drilling Method: GeoProbe
Project: Former Union Street Sunoco		Sampling Method: Continuous
Location: 1126 South Union Street, Mishawaka, Indiana		Weather: 25°F, sunny
Logged By: NRV		Time Terminated: 16:10
Drilling Company: Midway	Drillers: Mark, Jeff	Completion Date: February 28, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
0.4	10YR 3/2 very dark grayish brown LOAMY TOPSOIL, gravel, organics				0.4
2	10YR 5/3 brown fine grain SAND fill, moist				2
4	Concrete debris			16.1	4
4	10YR 6/2 light brownish gray fine grain SAND, gravel, wet			53.9	4
6					6
8	10YR 3/1 very dark gray SILT LOAM, gravel, wet, debris, slight odor			82.0	8
10	10YR 4/1 dark gray fine to medium grain SAND, wet			572.7	10
12	Saturated at 11.5'		Ground water sample taken at 16:25	867.1	12
14	10YR 4/3 brown mottled 10YR 6/2 light brownish gray medium to coarse grain SAND, saturated			39.5	14
16	Bottom of Boring at 16 ft			.9	16

BORING LOG 07-01-05.GPJ BORING LOG.GDT 5/14/08



Project Number: **07-01-05**

Client: City of Mishawaka	Drilling Method: GeoProbe
Project: Former Union Street Sunoco	Sampling Method:
Location: 1126 South Union Street, Mishawaka, Indiana	Weather: 30°F, cloudy, snow
Logged By: NRV	Time Terminated: 10:30
Drilling Company: Midway	Drillers: Mark, Jeff
	Completion Date: February 29, 2008

Depth (feet)	SOIL DESCRIPTION	Sample	REMARKS	PID (ppm)	Depth (feet)
0.0	10YR 3/2 very dark grayish brown LOAMY TOPSOIL, organics				0.0
2.0	10YR 4/4 dark yellowish brown medium to coarse grain SAND fill, gravel, wet				2.0
4.0	10YR 3/1 very dark gray FILL, asphalt debris			16.4	4.0
6.0	10YR 6/2 light brownish gray fine grain SAND fill, moist			18.3	6.0
8.0	10YR 4/1 dark gray fine to medium grain SAND, gravel, moist, slight odor			44.8	8.0
10.0				151.3	10.0
12.0	10YR 6/2 light brownish gray medium to coarse grain SAND, gravel, wet, slight odor Saturated at 11.5'		Ground water sample taken at 10:40	148.3	12.0
14.0	10YR 4/2 dark grayish brown medium to coarse grain SAND, gravel, saturated, slight odor			46.0	14.0
16.0	10YR 4/3 brown medium to coarse grain SAND, gravel, saturated			19.5	16.0
Bottom of Boring at 16 ft					



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Mr. Nivas Vijay
QEPI
1611 South Franklin Road
Indianapolis, IN 46239

March 25, 2008

ENVision Project Number: 2008-444
Client Project Name: 07-01-05.04/Former Union St. Sunoco

Dear Mr. Vijay,

Please find the attached analytical report for the samples received March 4, 2008. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. ENVision Laboratories looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in cursive script that reads "David Norris".

David Norris

Client Services Manager
ENVision Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100454





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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444
Analytical Method: 8015 TPH Gasoline Range
Prep Method: 5035
Analytical Batch: 030708GS
Client Sample ID: SB-6 (8-10') **Sample Collection Date/Time:** 2/28/08 11:50
Envision Sample Number: 8-2889 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH-Gasoline	< 20	20.0	
4-bromofluorobenzene (surrogate)	104%		
Analysis Date/Time:	03/07/08/21:10		
Analyst Initials	tjg		
Percent Solids	97%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444

Analytical Method: 8015 TPH Extended C8-C36
Prep Method: 3550B
Analytical Batch: 031108E

Client Sample ID: SB-6 (8-10') **Sample Collection Date/Time:** 2/28/08 11:50
Envision Sample Number: 8-2889 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH--Extended C8-C36	46	21	
o-Terphenyl (surrogate)	58%		
Analysis Date/Time:	3/12/2008 21:36		
Analyst Initials:	gjd		
Date Extracted:	3/11/2008		
Initial Sample Weight:	30.0 g		
Final Volume:	3.0 mL		
Percent Solids	97%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-444

Client Sample ID: SB-6 (8-10') **Sample Collection Date/Time:** 2/28/08 11:50
Envision Sample Number: 8-2889 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Analyte</u>	<u>Sample Results</u>	<u>Flags</u>	<u>Method</u>
Percent Moisture	3.0%		1684
Percent Solids	97.0%		1684
Analysis Date:	3/7/08		
Analyst Initials	zrc		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444
Analytical Method: 8015 TPH Gasoline Range
Prep Method: 5035
Analytical Batch: 030708GS
Client Sample ID: SB-8 (8-10') **Sample Collection Date/Time:** 2/28/08 14:30
Envision Sample Number: 8-2890 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH-Gasoline	< 20	20.0	
4-bromofluorobenzene (surrogate)	89%		
Analysis Date/Time:	03/07/08/20:51		
Analyst Initials	tjg		
Percent Solids	97%		

All results reported on dry weight basis.



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Client Name: QEPI

Project ID: Former Union St. Sunoco

Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-444

Analytical Method: 8015 TPH Extended C8-C36

Prep Method: 3550B

Analytical Batch: 031108E

Client Sample ID: SB-8 (8-10')

Envision Sample Number: 8-2890

Sample Matrix: soil

Sample Collection Date/Time: 2/28/08 14:30

Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH--Extended C8-C36	26	21	
o-Terphenyl (surrogate)	56%		
Analysis Date/Time:	3/12/2008 22:07		
Analyst Initials:	gjd		
Date Extracted:	3/11/2008		
Initial Sample Weight:	30.0 g		
Final Volume:	3.0 mL		
Percent Solids	97%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444

Client Sample ID: SB-8 (8-10') **Sample Collection Date/Time:** 2/28/08 14:30
Envision Sample Number: 8-2890 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Analyte</u>	<u>Sample Results</u>	<u>Flags</u>	<u>Method</u>
Percent Moisture	3.0%		1684
Percent Solids	97.0%		1684
Analysis Date:	3/7/08		
Analyst Initials	zrc		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444
Analytical Method: 8015 TPH Gasoline Range
Prep Method: 5035
Analytical Batch: 030708GS
Client Sample ID: SB-10 (8-10') **Sample Collection Date/Time:** 2/28/08 9:25
Envision Sample Number: 8-2891 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH-Gasoline	< 20	20.0	
4-bromofluorobenzene (surrogate)	111%		
Analysis Date/Time:	03/07/08/20:31		
Analyst Initials	tjg		
Percent Solids	96%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVISSION Project Number: 2008-444

Analytical Method: 8015 TPH Extended C8-C36
Prep Method: 3550B
Analytical Batch: 031108E

Client Sample ID: SB-10 (8-10') **Sample Collection Date/Time:** 2/28/08 9:25
ENVISSION Sample Number: 8-2891 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH--Extended C8-C36	53	21	
o-Terphenyl (surrogate)	58%		
Analysis Date/Time:	3/12/2008 22:38		
Analyst Initials:	gjd		
Date Extracted:	3/11/2008		
Initial Sample Weight:	30.0 g		
Final Volume:	3.0 mL		
Percent Solids	96%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444
Client Sample ID: SB-10 (8-10') **Sample Collection Date/Time:** 2/28/08 9:25
Envision Sample Number: 8-2891 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Analyte</u>	<u>Sample Results</u>	<u>Flags</u>	<u>Method</u>
Percent Moisture	4.0%		1684
Percent Solids	96.0%		1684
Analysis Date:	3/7/08		
Analyst Initials	zrc		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444
Analytical Method: 8015 TPH Gasoline Range
Prep Method: 5035
Analytical Batch: 030708GS
Client Sample ID: SB-11 (6-8') **Sample Collection Date/Time:** 2/28/08 14:10
Envision Sample Number: 8-2892 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH-Gasoline	< 20	20.0	
4-bromofluorobenzene (surrogate)	106%		
Analysis Date/Time:	03/07/08/20:12		
Analyst Initials	tjg		
Percent Solids	76%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-444

Analytical Method: 8015 TPH Extended C8-C36
Prep Method: 3550B
Analytical Batch: 031108E

Client Sample ID: SB-11 (6-8') **Sample Collection Date/Time:** 2/28/08 14:10
Envision Sample Number: 8-2892 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: soil

<u>Compounds</u>	<u>Sample Results (mg/kg)</u>	<u>Reporting Limit (mg/kg)</u>	<u>Flags</u>
TPH--Extended C8-C36	595	26	
o-Terphenyl (surrogate)	74%		
Analysis Date/Time:	3/12/2008 23:08		
Analyst Initials:	gjd		
Date Extracted:	3/11/2008		
Initial Sample Weight:	30.0 g		
Final Volume:	3.0 mL		
Percent Solids	76%		

All results reported on dry weight basis.



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-444

Client Sample ID:	SB-11 (6-8')	Sample Collection Date/Time:	2/28/08	14:10
Envision Sample Number:	8-2892	Sample Received Date/Time:	3/4/08	7:30
Sample Matrix:	soil			

<u>Analyte</u>	<u>Sample Results</u>	<u>Flags</u>	<u>Method</u>
Percent Moisture	24.0%		1684
Percent Solids	76.0%		1684
Analysis Date:	3/10/08		
Analyst Initials	zrc		



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8015 TPH-Gasoline Quality Control Data

ENVision Batch Number: 030708GS

<u>Method Blank (MB):</u>	<u>MB Results (mg/kg)</u>	<u>Rep Lim (mg/kg)</u>	<u>Flag</u>					
TPH-Gasoline	< 15	15						
4-bromofluorobenzene (surrogate)	103%							
Analysis Date/Time:	03-07-08/10:48							
Analyst Initials:	tjg							
<u>Laboratory Control Standard (LCS):</u>	<u>LCS Results (mg/kg)</u>	<u>LCS Conc (mg/kg)</u>	<u>% Rec</u>	<u>Flag</u>				
TPH-Gasoline	9.93	10	99.3					
4-bromofluorobenzene (surrogate)	112%							
Analysis Date/Time:	03-07-08/10:10							
Analyst Initials:	tjg							
<u>Matrix Spike/Matrix Spike Dup (MS/MSD)</u>	<u>Sample Results (mg/kg)</u>	<u>MS Res.</u>	<u>MSD Res.</u>	<u>Spike Conc.</u>	<u>MS Rec</u>	<u>MSD Rec</u>	<u>% D</u>	<u>Flag</u>
TPH-Gasoline	875	1080	1120	250	82	98	17.8	
4-bromofluorobenzene (surrogate)	82%	92%	99%					
Analysis Date/Time:	03-07-08/16:56	03-07-08/17:16	03-07-08/17:35					
Analyst Initials:	tjg							
Original Sample Number Spiked:	8-2912							



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8015 TPH-Extended Range Quality Control Data

ENVision Batch Number: 031108DS1

Method Blank (MB):	MB Results (mg/kg)	Reporting Limit (mg/kg)	Flag
TPH-Extended Range	< 20	20	
o-Terphenyl (surrogate)	60%		
Analysis Date/Time:	3/11/2008 19:24		
Analyst Initials:	gjd		
Date Extracted:	3/11/2008		
Initial Sample Weight:	30.0 g		
Final Volume:	3.0 mL		

LCS/LCSD	LCS Result (mg/kg)	LCS/LCSD Conc. (mg/kg)	LCSD Result (mg/kg)	LCS Rec.	LCSD Rec.	RPD	Flag
TPH-Extended Range	83.33	100	91.2	83.3%	91.2%	9.0%	
o-Terphenyl (surrogate)	78%		81%				
Analysis Date/Time:	3/11/2008 19:55		3/11/2008 20:26				
Analyst Initials:	gjd		gjd				
Date Extracted:	3/11/2008		3/11/2008				
Initial Sample Weight:	30.0 g		30.0 g				
Final Volume:	3.0 mL		3.0 mL				



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Flag Number

Comments



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Indianapolis, IN 46239
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QUALITY ENVIRONMENTAL PROFESSIONALS, INC. 2008-444

CHAIN OF CUSTODY RECORD

3/1/1

Project Name: <u>Former Valon St Sunoco</u>		Analyses Requested										Date Results Requested By: <u>Student</u>	
Laboratory: <u>ENVision</u>												<input checked="" type="checkbox"/> Please return original copy of Chain Of Custody Record to QEPI <input checked="" type="checkbox"/> We request that you submit chromatographs with all laboratory results, plus QA/QC documentation.	
Job #: <u>07-01-05.04</u>	Sampled By: <u>N. Vijay</u>											Remarks	
Report To: Quality Environmental Professionals, Inc. 1611 South Franklin Road • PHONE 317.351.4255 Indianapolis, IN 46239 • FAX 317.351.4265		Sample (Matrix) <u>TPH (600/800) 805</u>										Sample kept in ice at 4°C 4 oz jars	
Attention: <u>NIVAS VIJAY</u>													
Sample Description	Date	Time	Comp	Grab									
<u>SB-6 (8'-10')</u>	<u>2/28/08</u>	<u>1150</u>		<u>X</u>	<u>S</u>	<u>X</u>							<u>2889</u>
<u>SB-8 (8'-10')</u>	<u>2/28/08</u>	<u>1430</u>		<u> </u>	<u> </u>	<u> </u>							<u>2890</u>
<u>SB-10 (8'-10')</u>	<u>2/29/08</u>	<u>0925</u>		<u> </u>	<u> </u>	<u> </u>							<u>2891</u>
<u>SB-11 (6'-8')</u>	<u>2/28/08</u>	<u>1410</u>		<u>↓</u>	<u>↓</u>	<u>↓</u>							<u>2892</u>
Relinquished By: (Signature)	Date/Time: <u>3/4/08 0730</u>	Received By: (Signature)					Date/Time: <u>3-4-08</u>	Temperature When Shipped		Total # of Containers <u>4</u>			
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)					Date/Time:	Remarks					
Relinquished By: (Signature)	Date/Time:	Received For Lab By: (Signature)					Date/Time:	Temperature Upon Arrival at Lab:					



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Mr. Nivas Vijay
QEPI
1611 South Franklin Road
Indianapolis, IN 46239

March 18, 2008

ENVision Project Number: 2008-443
Client Project Name: 07-01-05.04/Former Union St. Sunoco

Dear Mr. Vijay,

Please find the attached analytical report for the samples received March 4, 2008. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. ENVision Laboratories looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in cursive script that reads "David Norris".

David Norris

Client Services Manager
ENVision Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100454





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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 030608VW
Client Sample ID: SB-7
Envision Sample Number: 8-2884
Sample Matrix: water
Sample Collection Date/Time: 2/28/08 15:40
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	1000	1,2
Acrolein	< 100	1000	1,2
Acrylonitrile	< 100	1000	1,2
Benzene	< 5	50	1,2
Bromobenzene	< 5	50	1,2
Bromochloromethane	< 5	50	1,2
Bromodichloromethane	< 5	50	1,2
Bromoform	< 5	50	1,2
Bromomethane	< 5	50	1,2
n-Butanol	< 50	500	1,2
2-Butanone (MEK)	< 10	100	1,2
n-Butylbenzene	< 5	50	1,2
sec-Butylbenzene	< 5	50	1,2
tert-Butylbenzene	< 5	50	1,2
Carbon Disulfide	< 5	50	1,2
Carbon Tetrachloride	< 5	50	1,2
Chlorobenzene	< 5	50	1,2
Chloroethane	< 5	50	1,2
2-Chloroethylvinylether	< 50	500	1,2
Chloroform	< 5	50	1,2
Chloromethane	< 5	50	1,2
2-Chlorotoluene	< 5	50	1,2
4-Chlorotoluene	< 5	50	1,2
1,2-Dibromo-3-chloropropane	< 5	50	1,2
Dibromochloromethane	< 5	50	1,2
1,2-Dibromoethane (EDB)	< 5	50	1,2
Dibromomethane	< 5	50	1,2
1,2-Dichlorobenzene	< 5	50	1,2
1,3-Dichlorobenzene	< 5	50	1,2
1,4-Dichlorobenzene	< 5	50	1,2
trans-1,4-Dichloro-2-butene	< 100	1000	1,2
Dichlorodifluoromethane	< 5	50	1,2



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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	50	1,2
1,2-Dichloroethane	< 5	50	1,2
1,1-Dichloroethene	< 5	50	1,2
cis-1,2-Dichloroethene	< 5	50	1,2
trans-1,2-Dichloroethene	< 5	50	1,2
1,2-Dichloropropane	< 5	50	1,2
1,3-Dichloropropane	< 5	50	1,2
2,2-Dichloropropane	< 5	50	1,2
1,1-Dichloropropene	< 5	50	1,2
cis-1,3-Dichloropropene	< 5	50	1,2
trans-1,3-Dichloropropene	< 5	50	1,2
Ethylbenzene	82.2	50	1
Ethyl methacrylate	< 100	1000	1,2
Hexachloro-1,3-butadiene	< 5	50	1,2
n-Hexane	< 10	100	1,2
2-Hexanone	< 10	100	1,2
Iodomethane	< 10	100	1,2
Isopropylbenzene (Cumene)	< 5	50	1,2
p-Isopropyltoluene	< 5	50	1,2
Methylene chloride	< 5	50	1,2
4-Methyl-2-pentanone (MIBK)	< 10	100	1,2
Methyl-tert-butyl-ether	< 5	50	1,2
Naphthalene	69.0	50	1
n-Propylbenzene	35.0	50	1,2
Styrene	< 5	50	1,2
1,1,1,2-Tetrachloroethane	< 5	50	1,2
1,1,2,2-Tetrachloroethane	< 5	50	1,2
Tetrachloroethene	< 5	50	1,2
Toluene	< 5	50	1,2
1,2,3-Trichlorobenzene	< 5	50	1,2
1,2,4-Trichlorobenzene	< 5	50	1,2
1,1,1-Trichloroethane	< 5	50	1,2
1,1,2-Trichloroethane	< 5	50	1,2
Trichloroethene	< 5	50	1,2
Trichlorofluoromethane	< 5	50	1,2
1,2,3-Trichloropropane	< 5	50	1,2
1,2,4-Trimethylbenzene	209	50	1
1,3,5-Trimethylbenzene	56.9	50	1
Vinyl acetate	< 10	100	1,2
Vinyl chloride	< 2	20	1,2
Xylene, M&P	248	50	1
Xylene, Ortho	< 5	50	1,2
Xylene (Total)	248	100	
Dibromofluoromethane (surrogate)	48.4	97%	
1,2-Dichloroethane-d4 (surrogate)	50.7	101%	
Toluene-d8 (surrogate)	50.2	100%	
4-bromofluorobenzene (surrogate)	45.9	92%	

Analysis Date/Time:

03/06/08/09:14

Analyst Initials

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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 030608GW
Client Sample ID: SB-7
Envision Sample Number: 8-2884
Sample Matrix: water
Sample Collection Date/Time: 2/28/08 15:40
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	474	220	
4-bromofluorobenzene (surrogate)	97%		
Analysis Date/Time:	03/07/08/08:54		
Analyst Initials	tjg		



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Client Name: QEPI

Project ID: Former Union St. Sunoco

Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-443

Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 030408E

Client Sample ID: SB-7
Envision Sample Number: 8-2884
Sample Matrix: water

Sample Collection Date/Time: 2/28/08 15:40
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	1100	100	
o-Terphenyl (surrogate)	55%		
Analysis Date/Time:	3/6/2008 17:08		
Analyst Initials:	gjd		
Date Extracted:	3/3/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 030608VW
Client Sample ID: SB-8
Envision Sample Number: 8-2885
Sample Matrix: water
Sample Collection Date/Time: 2/28/08 14:45
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	1000	1,2
Acrolein	< 100	1000	1,2
Acrylonitrile	< 100	1000	1,2
Benzene	< 5	50	1,2
Bromobenzene	< 5	50	1,2
Bromochloromethane	< 5	50	1,2
Bromodichloromethane	< 5	50	1,2
Bromoform	< 5	50	1,2
Bromomethane	< 5	50	1,2
n-Butanol	< 50	500	1,2
2-Butanone (MEK)	< 10	100	1,2
n-Butylbenzene	< 5	50	1,2
sec-Butylbenzene	< 5	50	1,2
tert-Butylbenzene	< 5	50	1,2
Carbon Disulfide	< 5	50	1,2
Carbon Tetrachloride	< 5	50	1,2
Chlorobenzene	< 5	50	1,2
Chloroethane	< 5	50	1,2
2-Chloroethylvinylether	< 50	500	1,2
Chloroform	< 5	50	1,2
Chloromethane	< 5	50	1,2
2-Chlorotoluene	< 5	50	1,2
4-Chlorotoluene	< 5	50	1,2
1,2-Dibromo-3-chloropropane	< 5	50	1,2
Dibromochloromethane	< 5	50	1,2
1,2-Dibromoethane (EDB)	< 5	50	1,2
Dibromomethane	< 5	50	1,2
1,2-Dichlorobenzene	< 5	50	1,2
1,3-Dichlorobenzene	< 5	50	1,2
1,4-Dichlorobenzene	< 5	50	1,2
trans-1,4-Dichloro-2-butene	< 100	1000	1,2
Dichlorodifluoromethane	< 5	50	1,2



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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	50	1,2
1,2-Dichloroethane	< 5	50	1,2
1,1-Dichloroethene	< 5	50	1,2
cis-1,2-Dichloroethene	< 5	50	1,2
trans-1,2-Dichloroethene	< 5	50	1,2
1,2-Dichloropropane	< 5	50	1,2
1,3-Dichloropropane	< 5	50	1,2
2,2-Dichloropropane	< 5	50	1,2
1,1-Dichloropropene	< 5	50	1,2
cis-1,3-Dichloropropene	< 5	50	1,2
trans-1,3-Dichloropropene	< 5	50	1,2
Ethylbenzene	180	50	1
Ethyl methacrylate	< 100	1000	1,2
Hexachloro-1,3-butadiene	< 5	50	1,2
n-Hexane	< 10	100	1,2
2-Hexanone	< 10	100	1,2
Iodomethane	< 10	100	1,2
Isopropylbenzene (Cumene)	32.5	50	1,2
p-Isopropyltoluene	< 5	50	1,2
Methylene chloride	< 5	50	1,2
4-Methyl-2-pentanone (MIBK)	< 10	100	1,2
Methyl-tert-butyl-ether	< 5	50	1,2
Naphthalene	231	50	1
n-Propylbenzene	73.8	50	1
Styrene	< 5	50	1,2
1,1,1,2-Tetrachloroethane	< 5	50	1,2
1,1,2,2-Tetrachloroethane	< 5	50	1,2
Tetrachloroethene	< 5	50	1,2
Toluene	< 5	50	1,2
1,2,3-Trichlorobenzene	< 5	50	1,2
1,2,4-Trichlorobenzene	< 5	50	1,2
1,1,1-Trichloroethane	< 5	50	1,2
1,1,2-Trichloroethane	< 5	50	1,2
Trichloroethene	< 5	50	1,2
Trichlorofluoromethane	< 5	50	1,2
1,2,3-Trichloropropane	< 5	50	1,2
1,2,4-Trimethylbenzene	392	50	1
1,3,5-Trimethylbenzene	140	50	1
Vinyl acetate	< 10	100	1,2
Vinyl chloride	< 2	20	1,2
Xylene, M&P	301	50	1
Xylene, Ortho	< 5	50	1,2
Xylene (Total)	301	100	
Dibromofluoromethane (surrogate)	48.4	97%	
1,2-Dichloroethane-d4 (surrogate)	46.2	92%	
Toluene-d8 (surrogate)	47.6	95%	
4-bromofluorobenzene (surrogate)	47.8	96%	

Analysis Date/Time:

03/06/08/09:37

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Client Name: QEPI

Project ID: Former Union St. Sunoco

Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-443

Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 030608GW

Client Sample ID: SB-8 **Sample Collection Date/Time:** 2/28/08 14:45
Envision Sample Number: 8-2885 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	1520	220	
4-bromofluorobenzene (surrogate)	93%		
Analysis Date/Time:	03/07/08/09:13		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 030408E

Client Sample ID: SB-8
Envision Sample Number: 8-2885
Sample Matrix: water
Sample Collection Date/Time: 2/28/08 14:45
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	1820	100	
o-Terphenyl (surrogate)	36%		
Analysis Date/Time:	3/6/2008 17:38		
Analyst Initials:	gjd		
Date Extracted:	3/3/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 030608VW
Client Sample ID: SB-10
Envision Sample Number: 8-2886
Sample Matrix: water
Sample Collection Date/Time: 2/28/08 9:45
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 100	100	
Acrylonitrile	< 100	100	
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 5	5	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 5	5	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 100	100	
Dichlorodifluoromethane	< 5	5	



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<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
cis-1,3-Dichloropropene	< 5	5	
trans-1,3-Dichloropropene	< 5	5	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 5	5	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
Naphthalene	< 5	5	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 5	5	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	48.6	97%	
1,2-Dichloroethane-d4 (surrogate)	46.5	93%	
Toluene-d8 (surrogate)	48.6	97%	
4-bromofluorobenzene (surrogate)	44.7	89%	

Analysis Date/Time:

03/06/08/10:01

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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 030608GW
Client Sample ID: SB-10 **Sample Collection Date/Time:** 2/28/08 9:45
Envision Sample Number: 8-2886 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	< 220	220	
4-bromofluorobenzene (surrogate)	94%		
Analysis Date/Time:	03/07/08/09:31		
Analyst Initials	tjg		



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Client Name: QEPI

Project ID: Former Union St. Sunoco

Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-443

Analytical Method: 8015M TPH-Ext C8-C36

Prep Method: 3520C

Analytical Batch: 030408E

Client Sample ID: SB-10

Envision Sample Number: 8-2886

Sample Matrix: water

Sample Collection Date/Time: 2/28/08 9:45

Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	1420	100	
o-Terphenyl (surrogate)	43%		
Analysis Date/Time:	3/6/2008 18:09		
Analyst Initials:	gjd		
Date Extracted:	3/3/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 030608VWB
Client Sample ID: SB-13
Envision Sample Number: 8-2887
Sample Matrix: water
Sample Collection Date/Time: 2/28/08 16:25
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 100	100	
Acrylonitrile	< 100	100	
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 5	5	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 5	5	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 100	100	
Dichlorodifluoromethane	< 5	5	



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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
cis-1,3-Dichloropropene	< 5	5	
trans-1,3-Dichloropropene	< 5	5	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 5	5	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
Naphthalene	< 5	5	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 5	5	
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 5	5	
1,2,4-Trimethylbenzene	6.89	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	5.90	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	47.7	95%	
1,2-Dichloroethane-d4 (surrogate)	46.7	93%	
Toluene-d8 (surrogate)	47.7	95%	
4-bromofluorobenzene (surrogate)	46.7	93%	

Analysis Date/Time:

03/06/08/11:56

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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 030608GW
Client Sample ID: SB-13 **Sample Collection Date/Time:** 2/28/08 16:25
Envision Sample Number: 8-2887 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	< 220	220	
4-bromofluorobenzene (surrogate)	100%		
Analysis Date/Time:	03/07/08/09:50		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVISSION Project Number: 2008-443
Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 030408E
Client Sample ID: SB-13
ENVISSION Sample Number: 8-2887
Sample Matrix: water

Sample Collection Date/Time: 2/28/08 16:25
Sample Received Date/Time: 3/4/08 7:30

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Extended C8-C36	< 100	100	
o-Terphenyl (surrogate)	51%		
Analysis Date/Time:	3/6/2008 18:39		
Analyst Initials:	gjd		
Date Extracted:	3/3/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-443
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 030608VWB
Client Sample ID: SB-14 **Sample Collection Date/Time:** 2/28/08 10:40
Envision Sample Number: 8-2888 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 100	100	
Acrylonitrile	< 100	100	
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	5.83	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 5	5	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 5	5	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 100	100	
Dichlorodifluoromethane	< 5	5	



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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
cis-1,3-Dichloropropene	< 5	5	
trans-1,3-Dichloropropene	< 5	5	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 5	5	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
Naphthalene	< 5	5	
n-Propylbenzene	9.30	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 5	5	
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 5	5	
1,2,4-Trimethylbenzene	32.8	5	
1,3,5-Trimethylbenzene	13.2	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	47.6	95%	
1,2-Dichloroethane-d4 (surrogate)	51.9	104%	
Toluene-d8 (surrogate)	47.2	94%	
4-bromofluorobenzene (surrogate)	46.4	93%	

Analysis Date/Time:

03/06/08/12:19

Analyst Initials

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Page 19 of 28



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Client Name: QEPI

Project ID: Former Union St. Sunoco

Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-443

Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 030608GW

Client Sample ID: SB-14 **Sample Collection Date/Time:** 2/28/08 10:40
Envision Sample Number: 8-2888 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	< 220	220	
4-bromofluorobenzene (surrogate)	84%		
Analysis Date/Time:	03/07/08/11:08		
Analyst Initials	tjg		



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Client Name: QEPI

Project ID: Former Union St. Sunoco

Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-443

Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 030408E

Client Sample ID: SB-14 **Sample Collection Date/Time:** 2/28/08 10:40
Envision Sample Number: 8-2888 **Sample Received Date/Time:** 3/4/08 7:30
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	660	100	
o-Terphenyl (surrogate)	52%		
Analysis Date/Time:	3/6/2008 19:10		
Analyst Initials:	gjd		
Date Extracted:	3/3/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		



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8260 Quality Control Data

ENVision Batch Number: 030508VW

<u>Method Blank (MB):</u>	<u>MB Results (ug/L)</u>	<u>Rep Lim (ug/L)</u>	<u>Flag</u>
Acetone	< 100	100	
Acrolein	< 100	100	
Acrylonitrile	< 100	100	
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 5	5	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 5	5	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 100	100	
Dichlorodifluoromethane	< 5	5	
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
cis-1,3-Dichloropropene	< 5	5	
trans-1,3-Dichloropropene	< 5	5	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	



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8260 QC Continued...

<u>Method Blank (MB):</u>	<u>MB Results (ug/L)</u>	<u>Rep Lim (ug/L)</u>
Hexachloro-1,3-butadiene	< 5	5
2-Hexanone	< 10	10
n-Hexane	< 10	10
Iodomethane	< 10	10
Isopropylbenzene (Cumene)	< 5	5
p-Isopropyltoluene	< 5	5
Methylene chloride	< 5	5
4-Methyl-2-pentanone (MIBK)	< 10	10
Methyl-tert-butyl-ether	< 5	5
Naphthalene	< 5	5
n-Propylbenzene	< 5	5
Styrene	< 5	5
1,1,1,2-Tetrachloroethane	< 5	5
1,1,2,2-Tetrachloroethane	< 5	5
Tetrachloroethene	< 5	5
Toluene	< 5	5
1,2,3-Trichlorobenzene	< 5	5
1,2,4-Trichlorobenzene	< 5	5
1,1,1-Trichloroethane	< 5	5
1,1,2-Trichloroethane	< 5	5
Trichloroethene	< 5	5
Trichlorofluoromethane	< 5	5
1,2,3-Trichloropropane	< 5	5
1,2,4-Trimethylbenzene	< 5	5
1,3,5-Trimethylbenzene	< 5	5
Vinyl acetate	< 10	10
Vinyl chloride	< 2	2
Xylene, M&P	< 5	5
Xylene, Ortho	< 5	5
Xylene (total)	< 10	10
Dibromofluoromethane (surrogate)	96%	
1,2-Dichloroethane-d4 (surrogate)	100%	
Toluene-d8 (surrogate)	95%	
4-bromofluorobenzene (surrogate)	98%	
Analysis Date/Time:	03/05/08/22:01	
Analyst Initials	tjg	

<u>LCS/LCSD</u>	<u>LCS Results (ug/l)</u>	<u>LCS/LCSD</u> <u>Conc. (ug/l)</u>	<u>LCSD Result</u> <u>(ug/l)</u>	<u>LCS</u> <u>Rec.</u>	<u>LCSD</u> <u>Rec.</u>	<u>RPD</u>	<u>Flag</u>
1,1-Dichloroethene	45.8	50	46	92%	92%	0.4%	
Benzene	45.2	50	45.4	90%	91%	0.4%	
Trichloroethene	47.3	50	50.1	95%	100%	5.7%	
Toluene	44.1	50	44.9	88%	90%	1.8%	
Chlorobenzene	45.5	50	47.6	91%	95%	4.5%	
Dibromofluoromethane (surrogate)	96%		98%				
1,2-Dichloroethane-d4 (surrogate)	97%		94%				
Toluene-d8 (surrogate)	96%		98%				
4-bromofluorobenzene (surrogate)	101%		96%				
Analysis Date/Time:	03/05/08/21:14		03/05/08/21:37				
Analyst Initials	tjg		tjg				



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8260 Quality Control Data

ENVision Batch Number: 030608VW

<u>Method Blank (MB):</u>	<u>MB Results (ug/L)</u>	<u>Rep Lim (ug/L)</u>	<u>Flag</u>
Acetone	< 100	100	
Acrolein	< 100	100	
Acrylonitrile	< 100	100	
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 5	5	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 5	5	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 100	100	
Dichlorodifluoromethane	< 5	5	
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
cis-1,3-Dichloropropene	< 5	5	
trans-1,3-Dichloropropene	< 5	5	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	



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8260 QC Continued...

Method Blank (MB):	MB Results (ug/L)	Rep Lim (ug/L)
Hexachloro-1,3-butadiene	< 5	5
2-Hexanone	< 10	10
n-Hexane	< 10	10
Iodomethane	< 10	10
Isopropylbenzene (Cumene)	< 5	5
p-Isopropyltoluene	< 5	5
Methylene chloride	< 5	5
4-Methyl-2-pentanone (MIBK)	< 10	10
Methyl-tert-butyl-ether	< 5	5
Naphthalene	< 5	5
n-Propylbenzene	< 5	5
Styrene	< 5	5
1,1,1,2-Tetrachloroethane	< 5	5
1,1,2,2-Tetrachloroethane	< 5	5
Tetrachloroethene	< 5	5
Toluene	< 5	5
1,2,3-Trichlorobenzene	< 5	5
1,2,4-Trichlorobenzene	< 5	5
1,1,1-Trichloroethane	< 5	5
1,1,2-Trichloroethane	< 5	5
Trichloroethene	< 5	5
Trichlorofluoromethane	< 5	5
1,2,3-Trichloropropane	< 5	5
1,2,4-Trimethylbenzene	< 5	5
1,3,5-Trimethylbenzene	< 5	5
Vinyl acetate	< 10	10
Vinyl chloride	< 2	2
Xylene, M&P	< 5	5
Xylene, Ortho	< 5	5
Xylene (total)	< 10	10
Dibromofluoromethane (surrogate)	98%	
1,2-Dichloroethane-d4 (surrogate)	100%	
Toluene-d8 (surrogate)	94%	
4-bromofluorobenzene (surrogate)	95%	
Analysis Date/Time:	03/06/08/11:33	
Analyst Initials	tjg	

LCS/LCSD	LCS Results (ug/l)	LCS/LCSD Conc. (ug/l)	LCSD Result (ug/l)	LCS Rec.	LCSD Rec.	RPD	Flag
1,1-Dichloroethene	53.2	50	47.4	106%	95%	11.5%	
Benzene	51.9	50	46.5	104%	93%	11.0%	
Trichloroethene	49.5	50	52.1	99%	104%	5.1%	
Toluene	46.4	50	42	93%	84%	10.0%	
Chlorobenzene	47.7	50	44.5	95%	89%	6.9%	
Dibromofluoromethane (surrogate)	95%		95%				
1,2-Dichloroethane-d4 (surrogate)	100%		93%				
Toluene-d8 (surrogate)	96%		92%				
4-bromofluorobenzene (surrogate)	95%		91%				
Analysis Date/Time:	03/06/08/10:47		03/06/08/11:10				
Analyst Initials	tjg		tjg				



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8015 TPH-Gasoline Quality Control Data

ENVision Batch Number: 030608GW

<u>Method Blank (MB):</u>	<u>MB Results (mg/L)</u>	<u>Rep Lim</u>	<u>Flag</u>
TPH-Gasoline	< 0.22 mg/L	0.22 mg/L	
4-bromofluorobenzene (surrogate)	89%		
Analysis Date/Time:	03/06/08/22:37		
Analyst Initials:	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (mg/L)</u>	<u>LCS/LCSD Conc.(mg/L)</u>	<u>LCSD Result (mg/l)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
TPH-Gasoline	9.96	10	10	100%	100%	0.4%	
4-bromofluorobenzene (surrogate)	100%		96%				
Analysis Date/Time:	03/06/08/21:57		03/07/08/10:10				
Analyst Initials	tjg		tjg				



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8015 TPH-Extended Range Quality Control Data

ENVision Batch Number: 030308DW

	MB Results (ug/L)	Reporting Limit (ug/L)	Flag
Method Blank (MB):	< 100	100	
TPH-Extended Range o-Terphenyl (surrogate)	68%		
Analysis Date/Time:	3/6/2008 7:01		
Analyst Initials:	gjd		
Date Extracted:	3/3/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		

	LCS Results (ug/L)	LCS/LCSD Conc. (ug/L)	LCSD Results (ug/L)	LCS Rec.	LCSD Rec.	RPD	Flag
LCS/LCSD	718.97	1000	744.33	72%	74%	3.5%	
TPH-Extended Range o-Terphenyl (surrogate)	75%		73%				
Analysis Date/Time:	3/6/2008 7:31		3/6/2008 8:01				
Analyst Initials:	gjd		gjd				
Date Extracted:	3/3/2008		3/3/2008				
Initial Sample Volume:	1000 mL		1000 mL				
Final Volume:	1.0 mL		1.0 mL				

	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Conc. (ug/L)	MS %Rec.	MSD %Rec.	RPD	Flag
Matrix Spike/Matrix Spike Dup	72.93	566.19	556.2	500	98.652	96.654	1.8	
TPH-Extended Range o-Terphenyl (surrogate)	55%	56%	53%					
Analysis Date/Time:	3/6/2008 9:02	3/6/2008 9:32	3/6/2008 10:03					
Analyst Initials:	gjd	gjd	gjd					
Date Extracted:	3/3/2008	3/3/2008	3/3/2008					
Initial Sample Volume	950 mL	950 mL	950 mL					
Final Volume:	1.0 mL	1.0 mL	1.0 mL					
Original Sample Number Spiked:	8-2681							



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Flag Number

Comments

- | | |
|---|---|
| 1 | Reported value is from a 10x dilution. TJG 03-17-08 |
| 2 | Reported value is below the reporting limit but above the mdl. TJG 03-17-08 |

2008-443



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QUALITY ENVIRONMENTAL PROFESSIONALS, INC.

CHAIN OF CUSTODY RECORD

P. 1/1

Project Name: <u>Former Union St Sunoco</u>		Analyses Requested										Date Results Requested By: <u>Sted</u>					
Laboratory: <u>ENVision</u>		Sample (Matrix) <u>TPH (660/820) 8015M</u> <u>VOCS 8260</u>										<input checked="" type="checkbox"/> Please return original copy of Chain Of Custody Record to QEPI <input checked="" type="checkbox"/> We request that you submit chromatographs with all laboratory results, plus QA/QC documentation.					
Job #: <u>07-01-05.04</u>	Sampled By: <u>N. Vijay</u>											Remarks					
Report To: Quality Environmental Professionals, Inc. 1611 South Franklin Road • PHONE 317.351.4255 Indianapolis, IN 46239 • FAX 317.351.4265												sample kept in ice etc 40 ml vials / HCl 1L Amber					
Attention: <u>NIVAS Vijay</u>																	
Sample Description	Date	Time	Comp	Grab													
SB-7	2/28/08	1540		X	W	X	X							2	8	8	4
SB-8	2/28/08	1445												2	8	8	5
SB-10	2/29/08	0945												2	8	8	6
SB-13	2/28/08	1625										2	8	8	7		
SB-14	2/29/08	1040										2	8	8	8		
Relinquished By: (Signature) <u>[Signature]</u>		Date/Time: <u>3/4/08 0730</u>	Received By: (Signature) <u>[Signature]</u>		Date/Time: <u>0730</u>	Temperature When Shipped		Total # of Containers									
Relinquished By: (Signature)		Date/Time:	Received By: (Signature)		Date/Time: <u>3-4-08</u>	Remarks											
Relinquished By: (Signature)		Date/Time:	Received For Lab By: (Signature)		Date/Time:	Temperature Upon Arrival at Lab:											



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Mr. Nivas Vijay
QEPI
1611 South Franklin Road
Indianapolis, IN 46239

April 4, 2008

ENVision Project Number: 2008-623
Client Project Name: Former Union St. Sunoco

Dear Mr. Vijay,

Please find the attached analytical report for the samples received March 26, 2008. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. ENVision Laboratories looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in black ink that reads "David Norris". The signature is written in a cursive, flowing style.

David Norris

Client Services Manager
ENVision Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100454





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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-623
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 032908VW
Client Sample ID: MW-1
Envision Sample Number: 8-4238
Sample Matrix: water
Sample Collection Date/Time: 3/25/08 9:55
Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Benzene	18.6	50	1,2
Toluene	< 50	50	1
Ethylbenzene	877	50	1
Xylene, M&P	2970	50	1
Xylene, Ortho	< 50	50	1
Xylenes, Total	2970	100	1
Methyl-tert-butyl-ether	< 40	50	1,2
Dibromofluoromethane (surrogate)	45.5	91%	
1,2-Dichloroethane-d4 (surrogate)	41.1	82%	
Toluene-d8 (surrogate)	49.7	99%	
4-bromofluorobenzene (surrogate)	49	98%	
Analysis Date/Time:	03/29/08/16:25		
Analyst Initials	tjg		



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Client Name: QEPI
 Project ID: Former Union St. Sunoco
 Client Project Manager: Nivas Vijay
 ENVision Project Number: 2008-623
 Analytical Method: 8015 GRO
 Prep Method: 5030
 Analytical Batch: 033008GW
 Client Sample ID: MW-1
 Envision Sample Number: 8-4238
 Sample Matrix: water
 Sample Collection Date/Time: 3/25/08 9:55
 Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	8450	220	
4-bromofluorobenzene (surrogate)	103%		
Analysis Date/Time:	03/30/08/18:05		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623

Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 033108E

Client Sample ID: MW-1 **Sample Collection Date/Time:** 3/25/08 9:55
Envision Sample Number: 8-4238 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	8900	100	
o-Terphenyl (surrogate)	48%		
Analysis Date/Time:	4/1/2008 13:36		
Analyst Initials:	gjd		
Date Extracted:	3/30/2008		
Initial Sample Volume:	990 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623

Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 032908VW

Client Sample ID: MW-2 **Sample Collection Date/Time:** 3/25/08 9:55
Envision Sample Number: 8-4239 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Benzene	< 5	50	1,2
Toluene	< 50	50	1
Ethylbenzene	37.6	50	1
Xylene, M&P	137	50	1
Xylene, Ortho	< 50	50	1
Xylenes, Total	137	100	1
Methyl-tert-butyl-ether	< 40	50	1,2
Dibromofluoromethane (surrogate)	44.1	88%	
1,2-Dichloroethane-d4 (surrogate)	47.1	94%	
Toluene-d8 (surrogate)	51.8	104%	
4-bromofluorobenzene (surrogate)	46.7	93%	
Analysis Date/Time:	03/29/08/16:48		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-623
Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 033008GW
Client Sample ID: MW-2
Envision Sample Number: 8-4239
Sample Matrix: water
Sample Collection Date/Time: 3/25/08 9:55
Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	3690	220	
4-bromofluorobenzene (surrogate)	109%		
Analysis Date/Time:	03/30/08/18:33		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623
Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 033108E

Client Sample ID: MW-2
ENvision Sample Number: 8-4239
Sample Matrix: water

Sample Collection Date/Time: 3/25/08 9:55
Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	1700	100	
o-Terphenyl (surrogate)	65%		
Analysis Date/Time:	4/1/2008 14:07		
Analyst Initials:	gjd		
Date Extracted:	3/30/2008		
Initial Sample Volume:	980 mL		
Final Volume:	1.0 mL		



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Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-623
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 032908VW
Client Sample ID: MW-3
Envision Sample Number: 8-4240
Sample Matrix: water
Sample Collection Date/Time: 3/25/08 9:40
Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Benzene	< 5	5	
Toluene	< 5	5	
Ethylbenzene	< 5	5	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylenes, Total	<10	10	
Methyl-tert-butyl-ether	< 5	5	
Dibromofluoromethane (surrogate)	45.8	92%	
1,2-Dichloroethane-d4 (surrogate)	44.2	88%	
Toluene-d8 (surrogate)	51.1	102%	
4-bromofluorobenzene (surrogate)	47.5	95%	
Analysis Date/Time:	03/29/08/17:11		
Analyst Initials	tjg		



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 Project ID: Former Union St. Sunoco
 Client Project Manager: Nivas Vijay
 ENVIision Project Number: 2008-623
 Analytical Method: 8015 GRO
 Prep Method: 5030
 Analytical Batch: 033008GW
 Client Sample ID: MW-3
 Envision Sample Number: 8-4240
 Sample Matrix: water
 Sample Collection Date/Time: 3/25/08 9:40
 Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	< 220	220	
4-bromofluorobenzene (surrogate)	113%		
Analysis Date/Time:	03/30/08/18:53		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623

Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 033108E

Client Sample ID: MW-3 **Sample Collection Date/Time:** 3/25/08 9:40
Envision Sample Number: 8-4240 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	< 100	100	
o-Terphenyl (surrogate)	68%		
Analysis Date/Time:	4/1/2008 15:11		
Analyst Initials:	gjd		
Date Extracted:	3/30/2008		
Initial Sample Volume:	980 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623

Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 032908VW

Client Sample ID: MW-4 **Sample Collection Date/Time:** 3/25/08 9:42
Envision Sample Number: 8-4241 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Benzene	< 5	50	1,2
Toluene	< 50	50	1
Ethylbenzene	158	50	1
Xylene, M&P	1230	50	1
Xylene, Ortho	< 50	50	1
Xylenes, Total	1230	100	1
Methyl-tert-butyl-ether	< 40	50	1,2
Dibromofluoromethane (surrogate)	44.6	89%	
1,2-Dichloroethane-d4 (surrogate)	45.9	92%	
Toluene-d8 (surrogate)	50.5	101%	
4-bromofluorobenzene (surrogate)	47.9	96%	
Analysis Date/Time:	03/29/08/17:34		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-623
Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 033008GW
Client Sample ID: MW-4
ENvision Sample Number: 8-4241
Sample Matrix: water
Sample Collection Date/Time: 3/25/08 9:42
Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	2750	220	
4-bromofluorobenzene (surrogate)	98%		
Analysis Date/Time:	03/30/08/19:12		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623
Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 033108E

Client Sample ID: MW-4 **Sample Collection Date/Time:** 3/25/08 9:42
Envision Sample Number: 8-4241 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	4200	100	
o-Terphenyl (surrogate)	54%		
Analysis Date/Time:	4/1/2008 15:42		
Analyst Initials:	gjd		
Date Extracted:	3/30/2008		
Initial Sample Volume:	980 mL		
Final Volume:	1.0 mL		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-623
Analytical Method: 8260
Prep Method: 5030B
Analytical Batch: 032908VW
Client Sample ID: MW-5 **Sample Collection Date/Time:** 3/25/08 9:35
Envision Sample Number: 8-4242 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Benzene	7.74	5	
Toluene	< 5	5	
Ethylbenzene	65.0	5	
Xylene, M&P	300	5	
Xylene, Ortho	< 5	5	
Xylenes, Total	300	10	
Methyl-tert-butyl-ether	< 5	5	
Dibromofluoromethane (surrogate)	45.7	91%	
1,2-Dichloroethane-d4 (surrogate)	47.1	94%	
Toluene-d8 (surrogate)	49	98%	
4-bromofluorobenzene (surrogate)	46.3	93%	
Analysis Date/Time:	03/29/08/17:52		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay
ENVision Project Number: 2008-623
Analytical Method: 8015 GRO
Prep Method: 5030
Analytical Batch: 033008GW
Client Sample ID: MW-5
Envision Sample Number: 8-4242
Sample Matrix: water
Sample Collection Date/Time: 3/25/08 9:35
Sample Received Date/Time: 3/26/08 9:42

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH-Gasoline	3830	220	
4-bromofluorobenzene (surrogate)	106%		
Analysis Date/Time:	03-30-08/19:31		
Analyst Initials	tjg		



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Client Name: QEPI
Project ID: Former Union St. Sunoco
Client Project Manager: Nivas Vijay

ENVision Project Number: 2008-623

Analytical Method: 8015M TPH-Ext C8-C36
Prep Method: 3520C
Analytical Batch: 033108E

Client Sample ID: MW-5 **Sample Collection Date/Time:** 3/25/08 9:35
Envision Sample Number: 8-4242 **Sample Received Date/Time:** 3/26/08 9:42
Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
TPH--Extended C8-C36	2800	100	
o-Terphenyl (surrogate)	60%		
Analysis Date/Time:	4/1/2008 16:13		
Analyst Initials:	gjd		
Date Extracted:	3/30/2008		
Initial Sample Volume:	980 mL		
Final Volume:	1.0 mL		



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8260 Quality Control Data

ENVision Batch Number: 032908VW

<u>Method Blank (MB):</u>	<u>MB Results (ug/L)</u>	<u>Rep Lim (ug/L)</u>	<u>Flag</u>
Methyl-tert-butyl-ether	< 5	5	
Benzene	< 5	5	
Toluene	< 5	5	
Ethylbenzene	< 5	5	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylenes, Total	<10	10	
Dibromofluoromethane (surrogate)	89%		
1,2-Dichloroethane-d4 (surrogate)	95%		
Toluene-d8 (surrogate)	102%		
4-bromofluorobenzene (surrogate)	98%		
Analysis Date/Time:	03/29/08/13:19		
Analyst Initials	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (ug/l)</u>	<u>LCS/LCSD Conc. (ug/l)</u>	<u>LCSD Result (ug/l)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
Methyl-tert-butyl-ether	47.3	50	47.1	95%	94%	0.4%	
Benzene	52.6	50	48.7	105%	97%	7.7%	
Toluene	53.8	50	49.8	108%	100%	7.7%	
Ethylbenzene	50.3	50	51.2	101%	102%	1.8%	
Xylene, M&P	104	100	106	104%	106%	1.9%	
Xylene, Ortho	53.4	50	55.5	107%	111%	3.9%	
Dibromofluoromethane (surrogate)	91%		89%				
1,2-Dichloroethane-d4 (surrogate)	92%		91%				
Toluene-d8 (surrogate)	103%		99%				
4-bromofluorobenzene (surrogate)	100%		100%				
Analysis Date/Time:	03/29/08/12:33		03/29/08/12:56				
Analyst Initials	tjg		tjg				



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8015 TPH-Gasoline Quality Control Data

ENVision Batch Number: 033008GW

<u>Method Blank (MB):</u>	<u>MB Results (mg/L)</u>	<u>Rep Lim</u>	<u>Flag</u>
TPH-Gasoline	< 0.22 mg/L	0.22 mg/L	
4-bromofluorobenzene (surrogate)	88%		
Analysis Date/Time:	03/30/08/14:14		
Analyst Initials:	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (mg/L)</u>	<u>LCS/LCSD Conc.(mg/L)</u>	<u>LCSD Result (mg/l)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
TPH-Gasoline	9.59	10	9.5	96%	95%	0.9%	
4-bromofluorobenzene (surrogate)	99%		98%				
Analysis Date/Time:	03/30/08/13:36		03/30/08/19:51				
Analyst Initials	tjg		tjg				



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8015 TPH-Extended Range Quality Control Data

ENVision Batch Number: 033008DW

Method Blank (MB):	MB Results (ug/L)	Reporting Limit (ug/L)	Flag
TPH-Extended Range	< 100	100	
o-Terphenyl (surrogate)	64%		
Analysis Date/Time:	4/1/2008 12:04		
Analyst Initials:	gjd		
Date Extracted:	3/30/2008		
Initial Sample Volume:	1000 mL		
Final Volume:	1.0 mL		

LCS/LCSD	LCS Results (ug/L)	LCS/LCSD Conc. (ug/L)	LCSD Results (ug/L)	LCS Rec.	LCSD Rec.	RPD	Flag
TPH-Extended Range	744.23	1000	713.73	74%	71%	4.2%	
o-Terphenyl (surrogate)	85%		75%				
Analysis Date/Time:	4/1/2008 12:35		4/1/2008 13:06				
Analyst Initials:	gjd		gjd				
Date Extracted:	3/30/2008		3/30/2008				
Initial Sample Volume:	1000 mL		1000 mL				
Final Volume:	1.0 mL		1.0 mL				



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Flag Number

Comments

- | | |
|---|--|
| 1 | Reported value is from a 10x dilution. TJJ 04-04-08 |
| 2 | Reported value is below the reporting limit but above the mdl. TJJ
04-04-08 |

