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REVISED
SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

GRAFT OIL COMPANY
HONEY BEAR MINI-MART
200 McKean Street
Kittanning, PA 16201
Facility I.D. No. 03-07315
USTIF No. 2002-0197(M)

Prepared for

Pennsylvania Department of Environmental Protection
Southwest Region
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LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
COCs	contaminants of concern
CSM	Conceptual Site Model
DPVE	dual phase vacuum extraction
EC	environmental covenant
MSC	Medium Specific Concentration
MSC_{IAQ}	Medium Specific Concentration for Indoor Air Quality
MSC_{SG}	Medium Specific Concentration for Soil Gas
MTBE	methyl tert-butyl ether
NQD	New Quick Domenico
ORC	oxygen releasing compound
OSHA	Occupational Safety and Health Administration
PADEP	Pennsylvania Department of Environmental Protection
PennDOT	Pennsylvania Department of Transportation
PID	photoionization detector
PNDI	Pennsylvania Natural Diversity Index
QA/QC	Quality Assurance / Quality Control
RACR	Remedial Action Completion Report
RAPR	Remedial Action Progress Report
RAP	Remedial Action Plan
SCR	Site Characterization Report
SHS-RUA	Statewide Health Standard, Residential, Used Aquifer
SPL	separate phase liquid
SSS	Site Specific Standard
SVE	soil vapor extraction
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Insite Group, Inc (IGI), on behalf of Graft Oil Company (Graft Oil) provides this Revised SCR / RAP for the Honey Bear Min-Mart located at 200 McKean Street in Kittanning, Armstrong County, Pennsylvania.

A release of unleaded gasoline was reported in April 2002 during an upgrade of the UST system. Approximately 500 tons of impacted soil were excavated, transported and disposed after the tanks and dispenser islands were removed. A pump and treat system consisting of three extraction wells and treatment trailer was installed under interim remedial action, but the system no longer operates.

Soil and groundwater investigations were completed, the most recent being the installation of several new monitoring wells (MW-8 through MW-12) to further define the impacts to groundwater and for the purpose of groundwater monitoring during the completion of recent pilot testing. Some of the new wells (MW-8D, MW-10D, and MW-12D) monitor a deeper horizon in the unconsolidated aquifer, as requested by the PADEP. Pilot tests included application of the oxidant Klosure Persulfate and DPVE.

Historically SPL did accumulate in several wells at the site but has not been present beyond a sheen since February 2010.

Current plans include the installation of a DPVE system to address impacted soil and groundwater in a depth ranging between 12 and 20 feet below bgs.

The Statewide Health Standard is the selected cleanup goal for soil and groundwater.

1.0 INTRODUCTION

Insite Group, Inc. (IGI), on behalf of Graft Oil Company (Graft Oil), provides this Revised SCR/RAP for the Honey Bear Mini-Mart (facility) located at 200 McKean Street in Kittanning Borough, Armstrong County, Pennsylvania.

This combined Site Characterization Report / Remedial Action Plan was completed in accordance with 25 PA Code § 245.309, 25 PA Code § 245.310, and 25 PA Code § 245.311.

The property location is shown on the Topographic Map, provided as Figure 1. The layout of the facility is shown on the Site Map, provided as Figure 2. A release of unleaded gasoline was reported in April 2002 during the upgrade of the UST system.

The RAP provides an approach for remediation of the COCs in soil and groundwater.

2.0 SITE DESCRIPTION

2.1 Property Description

The property is located on the north side of the intersection of Arch and McKean Streets in Kittanning Borough in Armstrong County, Pennsylvania. The size of the property is approximately 0.2-acres, and it is referenced as Tax Map ID No. 118.20-01-54. A one-story structure is located on the property. It is attached to another structure at the back, which is unrelated to Graft Oil's operations. The facility operations include retail sales of petroleum and grocery items. There is an overhead canopy with two dispenser islands. The parking lot consists of asphalt or concrete surfaces. The topography at the property is flat.

2.2 Surrounding Land Use

The use of surrounding properties includes the following:

- To the northeast: a law office and a beauty salon located in an adjoining building, followed by a shelter.
- To the northwest: Kittanning Area Middle School.
- To the west: a parking lot.
- To the southwest: US Post Office of Kittanning.
- To the south: a commercial building (Jackson Hewitt Tax Service office), followed by a parking lot and grocery store.
- To the southeast: First Baptist Church.

2.3 Geology and Hydrogeology

2.3.1 Regional Geology and Hydrogeology

This area is located within the Pittsburgh Low Plateau Section of the Appalachian Plateau Province, which is a large folded belt of mountains underlain by folded sedimentary rock. The Province stretches north 1,200 miles from Alabama to New York State. The hilltops and

ridges reflect the surface of what once was a plateau. Most strata in this province are gently folded with anticlinal and synclinal axes trending to the northeast.[1]

Bedrock below the Allegheny River and the Borough of Kittanning is of Pennsylvanian Age. There are three rock formations, which are exposed on the slopes of the valley. The Pottsville Group consists mostly of gray sandstone and conglomerate with thin beds of shale, claystone, limestone and coal. This unit outcrops about one mile north of Kittanning in the bottom of the river valley. The Pottsville Group is overlain by the rocks of the Allegheny Group, which is composed of cyclic sequences of sandstone, shale, limestone, clay and coal. This rock unit contains commercial deposits of limestone (Vanport Limestone) and coal (Freeport, Kittanning, Brookville, and Clarion coals). The Glenshaw Formation, part of the Conemaugh Group, caps the hillsides. This unit is composed of cyclic sequences of shale, sandstone, redbeds and thin limestone. The redbeds are susceptible to landslides.[2]

In the vicinity of the Borough of Kittanning, alluvial deposits and terraces along this section of the Allegheny River are generally narrow and restricted to the inner bends of meanders. Unconsolidated materials consist of near-surface interbedded silts and clays with underlying coarser sands and gravels. The silts and clays (point bar and overbank deposits) vary rapidly over short vertical and horizontal distances. Coarse sands and gravels reflect the past position of the riverbed and may rest on bedrock.

Structurally, the Borough of Kittanning is located on the northwest limb of an anticline whose axis trends northeast-southwest. The dip of the rock is northwest at about 2 degrees.

Regionally the groundwater aquifer occurs in bedrock where it is stored in fractures and joints. The bedrock immediately below the Borough of Kittanning is the Allegheny Group. Strata from this formation are capable of yielding between 25 and 350 gallons per minute. Yields in the underlying Pottsville Group range from 13 to 50 gallons per minute. Groundwater flow in the bedrock in the vicinity of Kittanning is toward the Allegheny River from the uplands. The groundwater aquifer also occurs in the alluvial deposits on the banks of the Allegheny River. These channel sands and gravels may provide acceptable amounts of water for commercial or residential use. A well drilled in sand and gravel in 1926, in the southern part of Kittanning had a reported yield of 150 gallons per minute.

Rivers act as regional discharge zones for surrounding aquifers. In dissected terrain, unconsolidated alluvial deposits in the valley bottoms typically intercept discharge from the surrounding hillsides and respond to changing water levels in the river, resulting in complex flow regimens.

[1] Briggs, R. P. "Chapter 30 – Appalachian Plateaus Province and the Eastern Lake Section of the Central Lowlands Province." *The Geology of Pennsylvania*. Ed. Charles H. Shultz. Pennsylvania Geological Survey and Pittsburgh Geological Society, 1999.

[2] Berg, T. M., Edmunds, W. E., Geyer, A. R., and others, compilers, 1980, Geologic map of Pennsylvania (2nd ed.): Pennsylvania Geological Survey, 4th ser., Map 1, 3 sheets, scale 1:250,000.

2.3.2 Site Geology and Hydrogeology

Test borings and excavations at the facility identified fill deposits that may have been associated with past construction. Some of this material was excavated and disposed and the area backfilled with clean fill during interim remediation.

The naturally occurring soils below the site range from uppermost silty clay that grade downward to a fine-grained sand with a basal sand and gravel. The densities of the soils are typically loose to medium dense. Bedrock was not encountered. A geologic cross section is presented as Figure 3. Boring logs and well construction diagrams are provided as Attachment A.

Depth to first groundwater in the source area generally ranges seasonally from 12 to 18 feet bgs. Two unconsolidated zones are monitored at the site: 10 to 20 feet and 25 to 35 feet. Groundwater in both zones flows southwest toward the Allegheny River. Groundwater contour maps are provided as Figures 4 and 5.

The hydraulic gradient in the shallow zone ranges from 0.0020 to 0.0027 ft/ft. The hydraulic gradient in the deeper zone is approximately 0.014 ft/ft.

2.3.3 Surface Water

The property is located in the Ohio River Basin, the Central Allegheny Subbasin (Subbasin Number 17), Cowanshannock - Crooked Creeks Watershed (Watershed E). The land surface rises away from the Allegheny River channel, directing regional surface flow in this basin to the river channel. The Allegheny River is a regional groundwater discharge zone. The Allegheny River is located approximately 1,000 feet southwest of the property.

Surface water runoff from the property is directed into storm sewer catch basins along Arch and N. McKean Streets. The storm sewer catch basins direct water to a combined storm and sanitary sewer system.

2.4 Utilities

A summary of onsite utilities is provided below:

The locations of the sanitary sewer, natural gas, electrical, water, and storm sewer lines were identified on and near the property:

Electrical: Overhead lines located along N. McKean Street provide electrical service to the building. From the building underground electric is routed to the UST system.

Sewage: A sanitary sewer service line is routed from the building southwest to the main line located in N. McKean Street. Sewer lines are also routed along Arch Street.

Storm Water: Storm water lines are combined with the sanitary lines. Storm sewer catch basins located along N. McKean and Arch Streets direct surface runoff to the sanitary sewer.

Potable Water: A potable water service line is routed from the northeast corner of the building to Arch Street. Other potable water lines are routed along both N. McKean Street and Arch Street.

Natural Gas: A natural gas service line is routed from the northeast corner of the building to Arch Street. Other natural gas lines are routed along both N. McKean Street and Arch Street.

The locations of known utilities are shown on Figure 2.

2.5 Property History

The facility has operated as a gasoline retail facility since the 1940s, and historical operations included gasoline retail and automotive repair. The property was purchased by Graft Oil in 1989. Prior to that, the facility operated as a Big Bear gasoline retail facility, and earlier, an Atlantic service station.

3.0 SITE HISTORY

3.1 Summary of Registered USTs

Tank No.	Capacity (gallons)	Substance	Status	Installation Date	Closure Date
001	4,000	Gasoline	Closed	unknown	06/20/2002
002	4,000	Gasoline	Closed	unknown	06/19/2002
003	4,000	Gasoline	Closed	unknown	06/19/2002
004	4,000	Gasoline	Closed	unknown	06/20/2002
005	4,000	Gasoline	Active	06/20/2002	
006	4,000	Gasoline	Active	06/20/2002	
007	4,000	Gasoline	Active	06/20/2002	
008	4,000	Gasoline	Active	06/20/2002	

3.2 Preliminary Soil and Groundwater Assessment – April 2002

One soil boring / monitoring well (B-1 / MW-1) was drilled and installed on April 19, 2002, to determine the depth to groundwater in preparation for the over-excavation of the existing cavity to accommodate the new tanks. The well was located adjacent to the UST cavity and drilled to a depth of approximately 16-feet below grade. Field observations of soil conditions included petroleum-staining and gasoline odors. Soil samples were collected at continuous 2-foot intervals.

Four soil samples were submitted for laboratory analysis of unleaded gasoline parameters. The benzene concentration exceeded the SHS-RUA in all four samples. The results are

summarized in Table 1.0. The laboratory analytical report was submitted to the PADEP as an attachment to the 2006 SCR.

A groundwater sample was collected from MW-1 on April 19, 2002, and submitted for laboratory analysis of unleaded gasoline parameters. Benzene (250 ug/L), ethylbenzene (2,000 ug/L), MTBE (560 ug/L), naphthalene (890 ug/L) and total xylenes (13,000 ug/L) concentrations exceed the SHS-RUA. The results are also summarized in Table 1.0. The laboratory analytical report was submitted to the PADEP as an attachment to the 2006 SCR.

As a result of the findings of this investigation, a release was confirmed and the DEP Pittsburgh regional office notified by telephone on April 19, 2002. The reported release was identified prior to the removal of the USTs.

3.3 UST Closure – June 2002

Four USTs were permanently removed on June 19 and 20, 2002, including:

- Tank No. 001 – 4,000-gallon unleaded gasoline
- Tank No. 002 – 4,000-gallon unleaded gasoline
- Tank No. 003 – 4,000-gallon unleaded gasoline
- Tank No. 004 – 4,000-gallon unleaded gasoline

During the UST removal, grossly contaminated soils were observed under the piping at the dispenser island, along the piping trench and at the corner of the UST cavity where the piping trench entered the UST cavity. The tanks appeared to be in good condition. Product piping was determined to be the cause of the release.

Due to obvious extensive contamination, UST Closure Assessment sampling was not performed and the site entered into Interim Remediation. The UST Closure Report was completed July 9, 2002, and was submitted to the DEP. The layout of the former UST system and point of release are shown on Figure 6.

Between June 20 and June 28, 2002, source area soil was excavated to the extent practical. Gasoline impacted soil along the south and west sides of the cavity, along a portion of the floor of the cavity, along the piping trench and below the former dispenser island was excavated and transported to Soil Remediation, Inc. in Lowellville, Ohio for thermal treatment. Soil analytical results from MW-1 were used for profiling the soil with the treatment facility in advance. Approximately 473 tons of contaminated soil was thermally treated.

The excavation included an area 30 by 30-feet and approximately 10-feet deep in the UST cavity and an area 35 by 20-feet and approximately 5-feet deep under the former dispensers. The area of soil excavated is shown on Figure 6.

Following the excavation of soils, five confirmatory soil samples were collected from the excavation. Samples SS-1, SS-2 and SS-3 were collected from the bottom of the UST cavity and SS-4 and SS-5 were collected from the area beneath the former dispensers. The soil analytical results are summarized in Table 2.0. The MTBE concentration exceeded the

SHS-RUA in sample SS-4 (5.3 mg/kg). The laboratory analytical report was submitted to the PADEP as an attachment to the 2006 SCR.

3.4 Historical Subsurface Investigations

A historical summary of soil boring and monitoring wells completed at the site is provided below. Monitoring well locations are shown on Figure 2. Soil boring locations are shown on Figure 7. Historical soil analytical results are summarized in Table 3.0. Historical groundwater analytical results are summarized in Table 4.0. Soil boring logs / well construction diagrams are provided as Attachment A. The laboratory analytical reports were submitted to the PADEP as an attachment to the 2006 SCR.

3.4.1 Soil and Groundwater Investigation – June-August 2002

In June 2002, one additional soil boring / monitoring well (B-2/MW-2), and three extraction wells (EW-1, EW-2 and EW-3) were drilled and installed.

Two soil samples were submitted for laboratory analysis of unleaded gasoline parameters. The benzene concentration exceeded the SHS-RUA in EW-3, 14-16 feet (2.0 mg/kg). Contaminant concentrations were below the SHS-RUA in B-2/MW-2.

IGI developed the wells. Sampling of MW-2 is discussed in Section 3.4.2 below. On August 9, 2003, a groundwater sample was collected from each extraction well for laboratory analysis of unleaded gasoline parameters. Benzene and MTBE concentrations exceeded the SHS in EW-1, EW-2 and EW-3. Ethylbenzene and toluene concentrations also exceeded the SHS-RUA in EW-2.

3.4.2 Groundwater Investigation – June 2003

In June 2003 following the replacement of the old sanitary sewer lateral on the property, the groundwater elevation on the property lowered making it necessary to over-drill MW-1 and MW-2 to a deeper depth.

IGI re-developed the wells and groundwater samples were collected for laboratory analysis of unleaded gasoline parameters on June 18, 2003. Benzene and MTBE concentrations exceeded the SHS in MW-1 and MW-2. Toluene exceeded the SHS-RUA in MW-1, and ethylbenzene exceeded the SHS-RUA in MW-2.

The extent of impact to soil and groundwater was not defined; therefore additional soil borings and monitoring wells were drilled and installed.

3.4.3 Soil and Groundwater Investigation – April 2004

In April 2004, three additional monitoring wells (MW-3, MW-4 and MW-5) were drilled and installed. Soil samples were collected at 2-foot continuous intervals. Based on headspace results using a PID, the sample showing the highest vapor readings for each borehole, or in the absence of petroleum impacts the sample just above the saturated zone, were selected for laboratory analysis.

Monitoring wells MW-3 and MW-4 were installed in the downgradient direction from the release location on the US Post Office of Kittanning property in accordance with a signed access agreement. Monitoring well MW-5 was installed upgradient of the release.

A total of four soil samples were submitted for laboratory analysis. Contaminant concentrations did not exceed their respective SHS-RUA values in soil in MW-3, MW-4 or MW-5.

The wells were developed and on April 16, 2004 groundwater samples were collected for laboratory analysis. Benzene and MTBE concentrations exceeded the SHS-RUA in MW-3 and MW-4.

The extent of impact to soil was defined during this investigation. The extent of impact to groundwater was not defined; therefore additional monitoring wells were drilled and installed.

3.4.4 Groundwater Investigation – May 2004

In May 2004, two additional monitoring wells (MW-6 and MW-7) were drilled and installed further downgradient on the US Post Office of Kittanning property. The wells were developed, and groundwater samples were collected for laboratory analysis of unleaded gasoline parameters on May 18, 2004. Contaminant concentrations do not exceed their respective SHS-RUA values in groundwater in MW-6 or MW-7. The extent of impact to groundwater was defined in the downgradient direction during this investigation.

3.5 Soil Vapor Sampling – March 2005

IGI installed three soil vapor sampling points (VP-1, VP-2, and VP-3, originally labeled GP-1, GP-2, and GP-3) on February 16, 2005. Each soil vapor monitoring point consists of a single ¾-inch PVC soil vapor monitoring well 8 feet deep with a 1-foot slotted screen interval from 7 to 8 feet bgs. Soil vapor monitoring point construction diagrams are included in Attachment A.

Soil vapor samples were collected from VP-1 and VP-3 on March 7, 2005. Each soil vapor monitoring point was purged and a soil vapor sample was collected from each point in a Tedlar bag. The samples were submitted for laboratory analysis of gasoline parameters by Method TO-15A. Soil vapor analytical results are summarized in Table 5.0. The results did not exceed their respective Residential MSC_{SG}. The laboratory analytical report was submitted to the PADEP as an attachment to the 2006 SCR.

3.6 Report Submissions

3.6.1 UST Closure Report – July 2002

The UST Closure Report was submitted by IGI for the removal of four, 4,000-gallon unleaded gasoline USTs (Tanks 001, 002, 003 and 004). The tanks appeared to be in good condition. Product piping was determined to be the cause of the release.

3.6.2 Site Characterization Report – September 2006

An SCR was prepared by IGI and submitted to the PADEP in September 2006. The conclusions of the SCR included the following:

- The extent of SPL was identified.
- The extent of impact to soil is defined.
- The extent of impact to groundwater has been defined.
- One potential exposure pathway has been identified: inhalation of gasoline vapors.
- Pathway analysis indicates that there is negligible risk associated with the vapor intrusion pathway.

3.6.3 Remedial Action Plan – November 2006

A RAP was prepared by IGI and submitted to the PADEP in November 2006. The remedial approach included the following:

- Continue operation of the pump and treat system initiated under interim action.
- The use of SVE was discussed since slotted PVC piping was placed in the vadose zone around the former dispenser island.
- Application of a chemical oxidant as hydrogen peroxide.
- Application of a site specific microbial culture to enhance biological degradation in groundwater.

3.7 Interim Remedial Action and Remediation

3.7.1 Soil Excavation During UST Closure – June 2002

Approximately 473 tons of impacted soil was excavated from the UST tank cavity, piping run and dispenser area, transported and disposed under interim remedial action.

3.7.2 SPL Recovery – August 2004 to April 2010

Approximately 82 gallons of SPL was recovered at the site between August 2004 and April 2010. Most of the SPL was recovered from EW-2 using passive absorbents (approximately 75.5 gallons). Some SPL was also recovered from IW-1 (approximately 1.4 gallons) and IW-2 (approximately 0.8 gallons). Approximately 4.5 gallons of SPL was recovered using vacuum extraction in October 2004. A summary of historical SPL recovery is provided in Table 6.0.

On June 10, 2005, IGI completed a geophysical survey of the subsurface of the Graft Oil property to map the extent of SPL. A time-domain electromagnetic (TDEM) terrain conductivity meter (EM-61) and 250-mHz Ground Penetrating Radar (GPR) were used. TDEM imaging was deployed across the Site in 3-foot wide swaths. This technology can detect ferrous and non-ferrous buried objects and subsurface anomalies that may represent SPL on water. The results of the geophysical survey are provided as Attachment B. The data did not suggest the presence of an orphan UST. However, an anomaly was detected in the same location as a historic UST cavity shown on Sanborn maps.

The pump and treat system was shutdown in March 2010, and no measurable SPL has collected in EW-2 since April 2010.

3.7.3 Groundwater Pump and Treat System – September 2004 to March 2010

During this period of time approximately 2,065,728 gallons of impacted groundwater was extracted from three wells (EW-1, EW-2, EW-3), treated using liquid granular activated carbon and followed with the permitted discharge to the sanitary sewer. Approximately 25.5 pounds of mass was removed. Groundwater flow totals, influent concentrations, and mass removals are summarized in Table 7.0.

4.0 ADDITIONAL SITE CHARACTERIZATION DATA

Since the submission of the SCR and RAP in 2006, IGI has collected additional site characterization data to further characterize vapors, soil and groundwater. The PADEP requested additional monitoring wells to fill some data gaps in the monitoring well network, including installation of several deeper monitoring wells and several new shallow wells. Soil analyses included vertical profiling in preparation for a treatability study and pilot testing.

4.1 Soil Investigation – February 2011

IGI completed a soil investigation on February 8 through 10, 2011, and advanced 13 soil borings (P-1 through P-13) using the GeoProbe drilling method. Refusal of the drill rods occurred for the P-9 soil boring. Soil boring logs are included in Attachment A. The purpose of the investigation was to evaluate the horizontal and vertical extent of soil impact and to collect samples for a bench top treatability study using Klozur Persulfate (discussed in section 6.1.1).

A total of 30 soil samples were submitted for laboratory analysis of unleaded gasoline parameters by EPA Method 5035/8260B, and 3 samples were submitted for laboratory analysis of total organic carbon by USDA LOI. The results are summarized in Table 8.0. The primary constituent detected in soil is benzene. The benzene concentration exceeds the SHS-RUA in 10 samples, ranging between 0.96 and 9.0 mg/kg. The ethylbenzene concentration exceeds the SHS-RUA in 1 sample (P-1, 89 mg/kg). Generally, the higher detections occur in closest proximity to the dispenser island area. Total organic carbon concentrations range from 4,600 to 6,100 mg/kg. The laboratory analytical reports are provided as Attachment C.

Based on this new analytical data, IGI revised the extent of impact to soil as shown on Figure 7. The areal extent of soil impact encompasses the footprint of the canopy and beyond extending to North McKean Street and southeastward across the site to near the Honey Bear sign. This extent is consistent with the release location. The depth of soil impact occurs from approximately 12 to 20 feet bgs, with the exception of one sample, P-4, which shows impact as deep as 23 feet bgs. A significant portion of the contaminant mass resides within the saturated zone. Soil at this site has an increase in particle size at depth. Shallow soils consist of primarily clay to approximately 12 feet bgs, followed by clayey sand or clayey sand and gravel to approximately 20 feet bgs, and then sand and gravel. Soil

moisture levels are elevated below 12 feet bgs. The depth to groundwater ranges between 12 and 18 feet bgs.

4.2 Soil and Groundwater Investigation – June 2012

On June 6 and 7, 2012, nine additional soil borings (IP-1, PT-2S, PT-4S, PT-8S, PT-2N, PT-4N, PT-8N, MW-8, and MW-9) were completed in order to collect baseline soil data for a pilot test using Klozur Persulfate (see Section 7.1). MW-8 and MW-9 were installed as point-of-compliance monitoring wells adjacent to McKean Street. The remainder of the wells were installed as pilot test injection (IP-1) or observation wells (PT-2S, PT-4S, PT-8S, PT-2N, PT-4N, PT-8N) in the source area near the dispenser islands. Well locations are shown on Figures 2 and 7. Well construction diagrams are included in Attachment A.

Soil samples were collected at 2-foot continuous intervals. Based on headspace results using a PID, the sample showing the highest vapor readings for each borehole were selected for laboratory analysis. The soil analytical results are summarized in Table 9.0. Concentrations of benzene, ethylbenzene, and naphthalene exceeded their respective SHS-RUA values in multiple samples. The laboratory analytical report is included in Attachment C.

The monitoring wells were developed on June 7, 2012, and groundwater samples were collected and submitted for laboratory analysis of unleaded gasoline parameters. The groundwater analytical results are also summarized in Table 9.0. Benzene and MTBE concentrations exceeded their respective SHS-RUA values in both MW-8 and MW-9. Benzene, MTBE, ethylbenzene, naphthalene, toluene, and xylenes concentrations exceeded their respective SHS-RUA values in many of the samples collected from the pilot test wells. The laboratory analytical report is included in Attachment D.

4.3 Soil Investigation (Post Klozur Injection) – July 2012

On July 10, 2012, 11 soil borings were completed to determine soil conditions after treatment with Klozur Persulfate as part of a pilot test (see Section 7.1). The soil borings were completed adjacent to soil borings completed previously as part of baseline soil sampling before Klozur Persulfate injection. The soil boring locations are shown on Figure 7.

A total of 26 soil samples were submitted for laboratory analysis. The analytical results are summarized in Table 10.0. Concentrations of benzene, ethylbenzene, naphthalene, and toluene exceeded their respective SHS-RUA values in multiple samples. The laboratory analytical report is included in Attachment C.

4.4 Soil and Groundwater Investigation – October 2013

The PADEP requested that additional shallow wells be installed to fill in some gaps in the shallow groundwater monitoring well network and that deeper wells be installed to determine if the plume was diving in the aquifer.

IGI installed six additional monitoring wells including three in the shallow zone of the unconsolidated aquifer (MW-10, MW-11, and MW-12) and three in the deeper zone of the unconsolidated aquifer (MW-8D, MW-10D, and MW-12D) on October 7 through 9, 2013. The shallow wells are screened from 7 to 22 feet, and the deeper wells are screened from 25 to 35 feet bgs. The locations of monitoring wells are shown on Figure 2.

Soil samples were collected at 2-foot continuous intervals. Based on headspace results using a PID, the sample showing the highest vapor readings for each borehole were selected for laboratory analysis. Soil samples collected from MW-10D, MW-11 and MW-12D were submitted for laboratory analysis of unleaded gasoline parameters. The soil analytical results are summarized in Table 11.0. Soil contaminant concentrations did not exceed any of their respective SHS-RUA values. The laboratory analytical report is included in Attachment C.

The wells were developed on October 25, 2013, and groundwater samples were collected and submitted for laboratory analysis of unleaded gasoline parameters. The groundwater analytical results are also summarized in Table 11.0. The benzene concentration exceeded the SHS-RUA in MW-8D (33 ug/L), MW-10 (190 ug/L), and MW-12 (52 ug/L). During subsequent sampling events, the benzene concentration did not exceed the SHS-RUA in MW-8D. The laboratory analytical report is included in Attachment D.

4.5 Soil Vapor Sampling – August 2014

Soil vapor samples were collected from each of the soil vapor wells (VP-1, VP-2, and VP-3) on August 19, 2014. Each soil vapor monitoring point was purged and a soil vapor sample was collected from each point using laboratory-provided Summa canister. The samples were submitted for laboratory analysis of gasoline parameters by Method TO-15A. Soil vapor analytical results are summarized in Table 5.0. The results did not exceed their respective Residential MSC_{SG}. The laboratory analytical report is provided as Attachment E.

4.6 Quarterly Groundwater Monitoring

Groundwater monitoring has been ongoing since 2002. Historical groundwater analytical results for all monitoring wells and extraction wells at the site are summarized in Table 4.0. The most recent quarter of groundwater monitoring results are summarized in Table 12.0. Laboratory analytical reports for groundwater sampling completed prior submission of the SCR in 2006 were included as an attachment to the SCR. Laboratory analytical reports for groundwater sampling completed since submission of the SCR are included in Attachment D.

4.7 Slug Testing

Slug tests were completed in monitoring well MW-2 and extraction well EW-1 on September 4, 2003, and in monitoring wells MW-10, MW-12, MW-8D, and MW-12D on October 28, 2013. A pressure transducer /data logger was used to record changes in groundwater elevation while a slug of a known volume was removed (slug-out or rising head test).

The data were downloaded from the pressure transducers /data loggers using InSitu® software. These data were then incorporated into spreadsheets provided by the US Geological Survey (USGS) for use in single well analyses using the Bouwer-Rice Method. Hydraulic conductivity was calculated to be 0.7 feet/day (MW-12), 2 feet/day (MW-2), 3 feet/day (MW-10 and MW-8D), 10 feet/day (EW-1), and 30 feet/day (MW-12D). The calculated average hydraulic conductivity in the shallow zone is 4 feet/day and in the deeper zone, 17 feet/day. Slug test results are summarized in Table 13.0. The Bouwer-Rice spreadsheets are provided as Attachment F.

4.8 Surveying

A survey of the subject property was completed by Robert R. Deglau of Allstate Surveying-Mapping Inc., a Professional Land Surveyor licensed in Pennsylvania. The survey included the location and elevation of all site monitoring wells, soil vapor wells, and pertinent site features, such as property boundaries, structures, utilities, and roadways. Mr. Deglau's survey has been used as the base map for the maps included in this report.

5.0 CLEANUP STANDARDS

The most stringent cleanup standards are selected, as listed below.

5.1 Selected Cleanup Standards

Soil: **Statewide Health Standard, Soil to Groundwater Numeric Values, Residential, Used Aquifer, TDS ≤2500.** *(25 PA Code Chapter 250 Appendix A, Table 3B – MSCs for Organic Regulated Substances in Soil, Soil to Groundwater Numeric Values)*

Statewide Health Standard, Direct Contact Numeric Values, Residential, 0-15 feet. *(25 PA Code Chapter 250 Appendix A, Table 3A – MSCs for Organic Regulated Substances in Soil, Direct Contact Numeric Values)*

Groundwater: **Statewide Health Standard, Residential, Used Aquifer, TDS ≤2500.** *(25 PA Code Chapter 250 Appendix A, Table 1 – MSCs for Organic Regulated Substances in Groundwater)*

5.2 Other Applicable Standards

Soil Vapor: **Residential MSC_{SG}.** *(Calculated as $MSC_{SG} = MSC_{IAQ} / 0.01$ in accordance with Land Recycling Program Technical Guidance Manual- Section IV.A.4. Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard. MSC_{IAQ} values found in Table 3 Indoor Air Criteria and Odor Thresholds)*

6.0 CONCEPTUAL SITE MODEL

CSM illustrations depicting contaminant migration pathways and potential exposure pathways are provided as Figure 8. The models depict a generalized cross-section of the site from southwest to northeast.

6.1 Contaminant Migration Pathways

The source of the release was identified as product piping beneath the dispensers. Some of the released product migrated downward beneath the dispensers. Released product also migrated along the piping trench to the UST cavity and downward through the porous gravel fill to the bottom of the UST cavity. Upon reaching the groundwater table, the product migrated laterally through the subsurface. A fluctuating water table, compounded by discharges from a leaking sanitary sewer connection at the site, resulted in a thick smear zone across the Honey Bear Mini-Mart property. A dissolved phase groundwater plume migrated southwestward toward the Post Office.

Underground utilities may provide a potential preferred pathway for the migration of vapors. At this site, there are no underground utilities that pass directly through zone of impacted soil. The sanitary sewer lateral passes several feet above the zone of impacted soil. One of the soil vapor monitoring points installed at the site in 2005 was installed near the sewer lateral in order to evaluate this potential preferred pathway.

6.2 Nature and Extent of Contamination

6.2.1 Extent of Impact to Soil

6.2.1.1 Unsaturated Zone

The extent of impact to soil in the unsaturated zone extends southward from the UST cavity to McKean Street and is approximately 740 square feet. Impacted soil in the unsaturated zone occurs primarily between 10 and 12 feet bgs, except in the vicinity of MW-1, where impacts occur between 8 and 12 feet bgs. The extent of impact to soil is shown on Figure 7.

The volume of soil in the unsaturated zone that is impacted at concentrations exceeding the SHS-RUA is approximately 1,480 cubic feet. Assuming an average contaminant concentration of 50 to 200 mg/kg, the calculated adsorbed phase contaminant mass in the unsaturated zone is 8.2 to 33 pounds.

6.2.1.2 Saturated Zone

Adsorbed phase contaminant mass in the saturated zone is present from approximately 12 feet to 20 feet bgs in the area south of the UST cavity between the Honey Bear Mini-Mart building and McKean Street. Impacts likely extend under McKean Street. The estimated area is approximately 2,370 square feet.

The volume of impacted soil in the saturated zone is approximately 16,590 cubic feet. Assuming an average contaminant concentration of 100 to 400 mg/kg, the calculated adsorbed phase contaminant mass in the saturated zone is 184 to 737 pounds.

6.2.2 Extent of Impact to Groundwater

The extent of impact to groundwater is defined both horizontally and vertically by the existing monitoring well network. Impacts are limited to the shallow zone (10 to 20 feet). Contaminant concentrations in the deeper zone (25 to 35 feet) do not exceed the SHS-RUA.

The groundwater plume includes much of the Honey Bear Mini-Mart property and extends southwestward to the Post Office property located on the opposite side of McKean Street. The highest contaminant concentrations occur in monitoring wells MW-8 and MW-9, which are located approximately 20 feet downgradient of the dispenser islands (the release location). The most downgradient monitoring wells (MW-6 and MW-7 located on the Post Office of Kittanning property) are not impacted.

Benzene, MTBE, ethylbenzene, and naphthalene isoconcentration maps for the shallow zone are provided as Figures 9 through 12.

Contaminant concentration trend graphs for monitoring wells located in the source area (MW-1, MW-2, MW-8, and MW-9) are provided as Figure 13. Contaminant concentrations in MW-2 appear to be decreasing gradually. Benzene, MTBE, and toluene concentrations in MW-1 have decreased over time, but concentrations of the other unleaded gasoline constituents have remained relatively stable. MTBE concentrations appear to be decreasing in MW-8 and MW-9. Concentrations of the other unleaded gasoline constituents have increased in MW-8 and fluctuate with no apparent trend in MW-9.

Contaminant concentration trend graphs for downgradient monitoring wells (MW-3, MW-4, MW-10, and MW-12) are provided as Figure 14. Contaminant concentrations appear to be decreasing in all of the downgradient wells.

The total aerial extent of the groundwater plume is approximately 11,500 square feet. The average water column height is approximately 8 feet. Adjusted for a porosity of 0.20, the total volume of impacted groundwater is approximately 137,600 gallons. Assuming average contaminant concentrations from 39 ug/L in the downgradient portions of the plume to 5,346 ug/L in the source area, the dissolved phase contaminant mass is estimated to be approximately 2 pounds.

6.3 Evaluation of Potential Sensitive Receptors

6.3.1 Water Well Survey

A search of the Pennsylvania Groundwater Information System (PaGWIS) database identified one water well within 1/2 mile of the site. The well is an industrial supply well and is located approximately 0.35 miles south-southeast. This well is not located within or downgradient of the groundwater plume. Therefore, the water well is eliminated from further consideration as a potential receptor. The water well survey information and location map are provided as Attachment G.

6.3.2 Municipal Water Supply

The public water supply is provided by the Pennsylvania-American Water Company, which obtains water from the Allegheny River from a point located downstream from the site. The municipal water supply is not a potential sensitive receptor.

6.3.3 Surface Water

The Allegheny River is located approximately 1,000 feet southwest and downgradient from the subject property. The groundwater plume extends approximately 70 feet downgradient from the subject property and does not reach the river.

6.4 Evaluation of Potential Exposure Pathways

The exposure pathways of potential concern to humans include the following:

- Ingestion of or direct contact with surface water.
- Ingestion of or direct contact with groundwater.
- Ingestion of or direct contact with soil.
- Inhalation of vapors emanating from contaminated soil or groundwater.

The exposure pathways were evaluated with respect to several receptors, including facility workers, trespassers, residential and recreational visitors and construction workers, as shown on Figure 15. The evaluation rationale is summarized below.

6.4.1 Ingestion of or Direct Contact with Surface Water

Surface water is not impacted by the release.

6.4.2 Ingestion of or Direct Contact with Groundwater

There are currently no water wells located within or downgradient from the groundwater plume, and the affected properties are connected to the public water supply. Therefore, there are no exposure pathways associated with ingestion of or direct contact with impacted groundwater.

Contaminated groundwater could pose a potential risk to construction workers in the event of future construction or excavation activities. However, if construction workers comply with OSHA Regulations, the risk associated with ingestion of or direct contact with contaminated groundwater is negligible.

Remediation to the SHS-RUA will ensure that exposure pathways associated with groundwater remain incomplete in the future.

6.4.3 Ingestion of or Direct Contact with Soil

Contaminated soil is located at depth and the entire area is covered with asphalt or concrete. Exposure could occur in the future if impacted soil were exposed during construction or excavation activities. However, if construction workers comply with OSHA

Regulations, the risk associated with ingestion of or direct contact with contaminated groundwater is negligible.

Remediation to the SHS-RUA will ensure that exposure pathways associated with soil remain incomplete in the future.

6.4.4 Inhalation of Vapors

Contaminant concentrations in soil vapors do not exceed Residential MSC_{SG} values. Therefore, the risk associated with inhalation of soil vapors is negligible and the associated pathways may be considered incomplete for all receptors.

6.5 Evaluation of Ecological Receptors

An evaluation of ecological receptors was not conducted for the site. This site is exempt from completing the survey per 250.311(b)(1): jet fuel, gasoline, kerosene, number two fuel oil or diesel fuel are the only constituents detected on site.

7.0 PILOT TESTING

7.1 Klozur Persulfate Pilot Testing

IGI completed a treatability study and a pilot study to evaluate the effectiveness of Klozur® Persulfate (Klozur) on gasoline contaminated soil and groundwater at the site.

In February 2012, soil samples were collected from the site and submitted to ReSolution Partners, LLC. for completion of a gasoline oxidation treatability study using Klozur. The treatability study was completed to determine if Klozur application was a viable technology for addressing soil and groundwater contamination at the site and determine the amounts of Klozur and activator necessary for optimal contaminant destruction. The treatability study results indicated that application of Klozur at a dosage rate of 5 wt% could successfully address soil and groundwater impacts at the site, assuming that the subsurface distribution of Klozur is adequate. A copy of the treatability study report is provided as Attachment H.

The pilot study injection was completed in June 2012. Approximately 500 gallons of Klozur solution was injected into IP-1 over a four hour period. Soil and groundwater samples were collected before and after injection and submitted for laboratory analysis of unleaded gasoline parameters. Groundwater samples were also analyzed in the field for pH, conductivity, sodium and sulfate

The detailed Klozur Persulfate Injection Pilot Study Report, dated January 23, 2013, was submitted to the PADEP. A copy is provided as Attachment I. The results are summarized below:

- Soil in the target zone accepted injected fluids at an average rate of approximately 2 gpm.

- The radius of influence was not uniform surrounding the injection well, likely due to the heterogeneous nature of the subsurface. The radius of influence to the north extended at least 8 feet, while the radius of influence to the south extended only 2 feet.

- Klozur injection appears to have reduced contaminant concentrations up to 86% in soil, but only in a very limited area (approximately 1 foot radius) around the injection well, and contaminant concentrations continue to exceed the SHS-RUA.

- Klozur injection reduced contaminant concentrations in groundwater. The greatest reductions were observed at the injection location (89%) and at 2 feet (83%) and 4 feet (81%) north of the injection location. Lesser reductions were observed 8 feet north (33%) and 2 feet south (23%) of the injection location. However, contaminant concentrations continue to exceed the SHS-RUA.

- Contaminant reductions in groundwater were temporary because high adsorbed phase contaminant concentrations remain in soil. Following an initial reduction in contaminant concentrations in groundwater, concentrations in groundwater gradually increased returning to an equilibrium state between the dissolved phase and adsorbed phase.

- Injection of 500 pounds of Klozur destroyed a total of 0.448 pounds of contaminants.

- Concentrations of sulfate, a daughter product of Klozur, did not exceed the secondary drinking water standard (250 ppm) at the property boundary or offsite. Sulfate concentrations did exceed the secondary drinking water standard on the property at a maximum of 8 feet (PT-8N) from the injection location.

- Between 202 and 1,042 pounds of gasoline constituents are present in soil and groundwater at the site.

- The total amount of Klozur required for successful full scale treatment of the site is calculated to be between 224,700 and 1,161,600 pounds. The amount of activator (sodium hydroxide) is calculated to be between 31,500 and 162,600 gallons.

- The radius of influence for contaminant destruction in soil was approximately 1 foot. In order to fully address the area of impact to soil (2,360 square feet), approximately 600 injection locations would be required, and the amount of Klozur per point ranges from approximately 400 to 1,900 pounds.

During the pilot test, Klozur injection showed limited success in destroying gasoline contaminants in both soil and groundwater at the site. Full scale implementation of Klozur injection is not practical due to the large volumes (224,700 to 1,161,600 gallons) of Klozur product and numerous injection locations (approximately 600) required to successfully address both soil and groundwater contamination at the site. Full scale implementation would likely result in widespread mounding of the groundwater table and expansion of the dissolved phase plume. Although concentrations of sulfate, a daughter product of Klozur, remained below secondary drinking water standards at the property boundary during the

pilot test, it is likely that sulfate would exceed secondary drinking water standards at the property boundary during full scale implementation.

7.2 DPVE Pilot Testing

A DPVE pilot test was conducted for wells IW-1 (screened from 10 to 20 feet bgs) and MW-8 (screened from 12 to 22 feet bgs). The duration of the test exceeded 7 hours for each well. The results indicate that approximately 4.5 scfm of soil vapors could be extracted from the test wells at a vacuum of 20 inches of mercury. Vacuum influence was detected at approximately 63 to 64 feet from each test well. Groundwater drawdown was observed approximately 63 feet from IW-1 and 14 feet from MW-8. Contaminant mass removal rates from air from IW-1 were calculated to be 0.160 lbs. of BTEX and MTBE per day and 23.7 lbs. of TPH-GRO per day. Contaminant mass removal rates from air from MW-8 were calculated to be 0.40 lbs. of BTEX and MTBE per day and 33 lbs. of TPH-GRO per day. Contaminant mass removal rates from groundwater for IW-1 and MW-8 in groundwater were 0.42 and 0.050 lbs. per day. The results of the DPVE pilot test are included as Attachment J.

8.0 REMEDIAL OPTIONS ASSESSMENT

The options assessment takes into account the following conditions and information:

Soil: A portion of the soil in the source area in the vadose zone was excavated and disposed. Due to a highly variable water table there is a thick smear zone.

Groundwater: A dissolved phase groundwater plume occurs in the shallow portions of the unconsolidated aquifer and extends off site downgradient to the U. S. Postal Service of Kittanning property. The particle size in the aquifer increases with depth and grades to a sand and gravel; therefore, DPVE wells should be limited to approximately 18 feet depth. The chemicals of concern are benzene, MTBE, ethylbenzene, naphthalene and xylenes.

Vapors: The risk associated with vapor intrusion has been demonstrated to be negligible based on analytical data.

Permitting: A permit to discharge to the local municipal sewer authority is attainable.

Technology	Advantages	Disadvantages
Monitored Natural Attenuation	• None	• Not a site wide remedial approach at this time. In the source area, current dissolved phase concentrations are approximately 1,000 times the SHS-RUA.
Excavation	• Under the current conditions, additional excavation has no advantage.	• Additional excavation is too disruptive and not practical due to depth of soil impact and the close proximity of infrastructure, the roadway and the main structure.

Technology	Advantages	Disadvantages
Groundwater Pump and Treat	• Can provide hydrogeologic control of the unconsolidated aquifer. • Pump test results show a large area of influence during pumping.	• Will not address the significant mass bound up in soil within the smear zone.
Soil Vapor Extraction with a Separate Groundwater Pumping System	• The soil permeability in the area of soil impact is amenable to vapor extraction as shown by pilot testing. • Provides hydrogeologic control of both aquifers. • Dewatering theoretically exposes the smear zone for treatment by vapor extraction.	• DPVE likely outperforms soil vapor extraction for treatment of the smear zone. • Low flow rates anticipated from each extraction well require a more complex pneumatic pumping system than extraction via a single vacuum pump / blower.
Dual Phase Vacuum Extraction	• Provides groundwater drawdown, exposes the smear zone and extracts significant mass as vapors. • Pilot testing this technology at the site was successful. • Pilot testing showed the groundwater extraction rate was within an acceptable range for DPVE if wells stay above 20 feet depth.	• Costlier system (equipment, electrical usage, maintenance) as compared to other systems.
Air Sparging with Soil Vapor Extraction	• Low maintenance system. • No ex-situ groundwater management	• Stripping MTBE from the groundwater is inefficient. • Potential loss of control of the groundwater plume and possibly vapor laden sparge air since sparging would occur in more permeable zone beneath the smear zone and sparge air may traverse beyond the plume extent.
Oxidant Injection (persulfate)	• As compared to other oxidants, this product has a slower reaction time (over 30 days), which allows it to come into contact with more soil. • The product does not create excessive off-gassing, and therefore reduces the likelihood of vapor intrusion. • The product is non-corrosive. • Oxidizes high contaminant concentrations.	• Based on hydrocarbon concentrations and estimated mass, the cost for this approach is prohibitive. • The volume required for injection would likely cause loss of control of the groundwater plume.
In-Situ Bioremediation Injection of Oxygen Releasing Compound	• This approach has been demonstrated to work well for lower contaminant concentrations.	• Concentrations are too high at this site.

9.0 REMEDIAL APPROACH

Remediation will be accomplished using a DPVE system consisting of a trailer-mounted unit and a series of extraction wells. The size of the DPVE system and placement of extraction wells is based on the results of the pilot test data. The targeted zone for treatment was determined based on analytical data collected during the site characterization and encompasses an area of approximately 6,700 square feet and ranges in depth from 10 to 20 feet bgs. This zone includes impacts to soil in the vadose and smear zones and

groundwater in the unconsolidated aquifer. Approximately 99% of the contaminant mass is calculated to be within the targeted treatment zone. The groundwater table fluctuates from approximately 11 to 18 feet bgs, which results in an impacted smear zone, or the zone that is occasionally saturated. IGI proposes an initial operating period of two years. The details of the system operation and maintenance will be provided on a quarterly basis and are discussed below.

10.0 DESIGN BASIS

The following table summarizes the DPVE remediation system design basis derived from site characterization data and pilot testing results.

PARAMETER	DESCRIPTION
In-Situ Remediation System	Soil: The targeted treatment zone includes the vadose and saturated zones between 10 and 20 feet bgs. Groundwater: The targeted treatment zone includes groundwater occurring between 11 and 20 feet bgs. The particle size and permeability of the aquifer increases at depth. It is not desired to pump excessive volumes of groundwater from a depth greater than 20 feet due to dilution of dissolved phase contaminants below this depth. Therefore, the depth of the extraction wells will not exceed 20 feet and the drop tubes in each extraction well will likely not exceed 18 feet. Seven extraction wells including EW-1 through EW-7 will be utilized for remediation. Three existing extraction wells, EW-1 (9 - 29 ft. bgs), EW-2 (11 - 26 ft. bgs) and EW-3 (8 - 28 ft. bgs), shall be over-drilled and reconstructed with screened intervals from 10 to 20 feet. Existing wells IW-1 and IW-2, screened from 10 to 20 feet bgs, shall be renamed as extraction wells EW-4 and EW-5. Two new extraction wells, EW-6 and EW-7, will be installed and will be screened from 10 to 20 feet bgs. The extraction well locations are shown on Figure 16.
Groundwater and Soil Vapor Extraction Rates	DPVE groundwater and soil vapor extraction flow rates will vary by well but on average it is estimated that 4.5 scfm of soil vapors and 0.5 gpm of groundwater will be extracted per well when a vacuum of approximately 16 inches of mercury is applied at the wells. A total of approximately 36 scfm of soil vapors and 4 gpm of groundwater will be extracted by the DPVE system at steady state. A vacuum extraction pump that can generate in excess of 20 inches of mercury vacuum at a minimum of 50 scfm is appropriate for this application so that there is excess capacity to adjust to field conditions experienced after startup. This can be accomplished by an Elmo Rietschle VLR-500 or VLR-400 vacuum blower.

PARAMETER	DESCRIPTION
Treated Water Discharge Rates	Based upon the cycling nature of water treatment and higher startup extraction rates associated with DPVE, the hydraulic capacity of the treatment system will be approximately 10 gpm.
Estimated Influent Dissolved Concentration	Startup influent groundwater concentrations are anticipated to be: • Benzene = 800 ug/L • Toluene = 90 ug/L • Ethylbenzene = 600 ug/L • Xylenes = 2,000 ug/L • MTBE = 10 ug/L • Naphthalene = 200 ug/L
Groundwater Treatment Technology	A series of two granular activated carbon (GAC) vessels will be used for treatment. It is anticipated that approximately 2 to 4 pounds per day of GAC will be initially spent.
Estimated Influent Vapor Concentrations	Startup influent soil vapor concentrations are anticipated to be: • Benzene = 200 mg/m^3 (63 ppmv) • Toluene = 20 mg/m^3 (5.3 ppmv) • Ethylbenzene = 100 mg/m^3 (23 ppmv) • Xylenes = 200 mg/m^3 (46 ppmv) • TPH – GRO = 70,000 mg/m3 (19,000 ppmv)
Vapor Treatment Technology	A series of two 1,000 lb. granular activated carbon (GAC) vessels will be used for treatment. It is anticipated that approximately 1,300 pounds per day of GAC will be initially spent. These concentrations are anticipated to decrease by approximately 60% to 90% within the first month of operation. The total mass of hydrocarbons calculated to be in the unsaturated and saturated zones is less than 1,000 pounds (see Section 6.2). If 90% are removed within the first month of operation then approximately 5,000 pounds of GAC may be consumed. The initial GAC changeout could be within a few days following startup with up to four more within the first month. Frequent monitoring of the GAC influent, midfluent, and effluent concentrations will be performed to schedule appropriate GAC changeouts.
Range of Dissolved Concentrations	Data collected during the fourth quarter 2013 indicated up to: 3,900 ug/L benzene, 430 ug/L toluene, 1,400 ug/L ethylbenzene, 3,100 ug/L xylenes, 1,200 ug/L MTBE, and 390 ug/L naphthalene.
Current Dissolved Remediation Objective	Statewide Health Standard, Residential, Used Aquifer (SHS-RUA)
Estimated Remediation Time	2 years

Design and Treatment Process Description

Pilot testing demonstrated that hydrocarbons can be remediated using DPVE. Benzene impacts are above 5 mg/kg in soil to approximately 20 feet bgs. Each extraction well will be plumbed with an extraction hose/pipe that extends approximately 18 feet bgs. After start up the extraction hose/pipe depths will be adjusted downward until set at 18 feet deep.

Each extraction well will have unique piping to the treatment system. The piping from the wells will be equipped with a flow control valve, vacuum gauge, and sampling port prior to being manifolded together inside the treatment building or trailer. Once the piping is manifolded together it will be plumbed to an air/water knock-out tank to separate soil vapors from groundwater.

Groundwater will be pumped via a progressive cavity pump through an oil/water separator and second transfer pump followed by four sediment filters, two in series for pretreatment prior to a series of two liquid-phase GAC (LGAC) units. Due to the cyclical nature of pumping and higher groundwater extraction rates at the startup of a DPVE system, the hydraulic capacity of the LGAC units will be 10 gpm. Sampling ports will be installed before the primary LGAC unit, after the primary LGAC unit, and after the secondary LGAC unit. A water flow meter and totalizer will be installed after the secondary LGAC unit.

The LGAC treatment system will utilize two vessels each containing 500 pounds of activated carbon. Based on a flow rate of 10 gpm, the minimum contact time is calculated to be approximately 8 minutes to allow for adequate adsorption. Based upon the initial anticipated concentrations from the wells and the LGAC isotherms for each constituent, the initial LGAC change out may occur after one to two months of continuous operation.

Soil vapors will be directed through a series of two vapor-phase GAC (VGAC) units. An air to air heat exchanger coupled with a condensate removal drum will be installed prior to the primary unit. Sampling ports will be installed before the primary VGAC unit, after the primary VGAC unit, and after the secondary VGAC unit. An air flow meter and hour meter for the vacuum blower will also be installed.

The main control of the treatment process will be a system of intrinsically safe float switches, pressure gauges and relays to insure proper operation and emergency shutdown of blowers. The float switches will be present in the air/water knock-out tank and oil-water separator. A telemetry system will be used to remotely monitor the system operation. A process flow diagram of the system is included as Figure 17.

As described later in this report, quarterly monitoring of the wells in conjunction with the operation of the remediation system will be used for system performance evaluation.

11.0 PERMITS AND APPROVALS

IGI has an access agreement with the Municipal Authority of Kittanning for discharge of treated groundwater.

IGI has an access agreement with the U. S. Postal Service to conduct quarterly groundwater sampling activities for monitoring wells located at the Kittanning property.

12.0 SYSTEM MONITORING

12.1 General Operational Strategy of the DPVE System

IGI's strategy for operation of the DPVE system is to remove as much mass as possible in the shortest period of time. At this site, the mass occurs in saturated and unsaturated soil and in groundwater in the unconsolidated aquifer. The site is located approximately 1,000 feet from the Allegheny River, which can affect the local water table rapidly if the river is in high flow conditions.

Mass is extracted from optimally-placed extraction wells having drop tubes. Groundwater and vapor are simultaneously extracted from the well. Efficient extraction depends on the position of the drop tube intake relative to the groundwater level in the extraction well. If the drop tube is placed too low into the water table, or if the groundwater table rises following a significant precipitation event, the extraction process may be interrupted by a process known as dead heading. In addition, if the well produces too much airflow, the volume of air can back pressure the blower. Due to the heterogeneity of the subsurface, it is not possible to know in advance, exactly how any well will respond to DPVE. Therefore, the system is designed with components to allow each well to be balanced by adjusting the drop tube elevation and flow control valves.

At start up, the aquifer system is put under the initial stress and the extraction of groundwater begins to occur. Over time the aquifer will adjust to the stress placed on it by the DPVE system and eventually reach a steady state. In this state, the groundwater table is maintained in a depressed condition, exposing the smear zone. The drop tube elevations must be gradually lowered in each extraction well during the start up process until the steady state is reached and the drop tube elevations can sustain the extraction of both groundwater and air. As the system operates over time, conditions change in each well such that the drop tubes must be monitored and adjusted as necessary.

The timing for the operation of any extraction well is based on site characterization data. Areas of highest mass are addressed first, then other areas over time, eventually addressing the entire area of impact.

While the operation of the DPVE system is continuous, the active use of individual extraction wells can vary. As the system continues to operate, DPVE may be focused on those wells containing the highest concentrations of hydrocarbons and those that provide the most dewatering. The DPVE system will be optimized based upon measuring extraction well vapor levels with a PID and groundwater levels.

The site is located near the Allegheny River and historical groundwater monitoring data shows significant variability in the groundwater table, especially when the river is in high flow condition. These temporary conditions may affect the treatment system operation at times.

IGI will likely adjust the operating scenario each quarter, or as needed. An operation and maintenance manual will be assembled and will include site-specific meter reading and maintenance forms and "as-built" diagrams of the system.

12.2 System Operation and Maintenance

Following system start-up, IGI will complete routine maintenance visits to verify that the DPVE system and iron removal system are operating properly. An operation and maintenance form will be completed during each inspection to document operational parameters, mechanical preventative maintenance and system repairs. Multiple carbon change-outs are anticipated during the first quarter of operation.

System parameters to be measured and recorded during startup and continued operation of the DPVE treatment system include:

- Remediation system vacuums, pressures, and temperatures.
- Vacuum for each extraction well.
- Total extracted air flow rate.
- Total extracted groundwater flow rate.
- PID readings of combined air influent, midfluent between air-phase carbon vessels, and effluent.
- PID readings of air extracted from each extraction well.
- pH of the liquid phase stream.
- Iron concentrations in the liquid phase stream.
- Vacuum / pressure at observation wells.
- Groundwater elevations at observation wells.
- Equipment run times.

Maintenance visits are scheduled to occur eight times during the first month, and six times per month thereafter. The primary need for frequent visits is anticipated to maintain the iron removal system, verify proper extraction well operation, adjust drop tubes as necessary, and change filters. System or equipment repairs, adjustments or replacements are completed as necessary. Routine maintenance activities include:

- Overall system inspection.
- Cleaning of system components, including float switches, Y-strainers, air water separators, EQ tank, ball valves, and filter housings.
- Change-out of filters.
- Backwashing of liquid phase carbon.
- Change-outs of liquid phase and air phase carbon.
- Blower maintenance including oil changes and lubrication.
- Verification that alarm systems, consisting of numerous float and pressure switches, are operational.

12.3 Subsurface System Performance Monitoring

Performance monitoring shall include an assessment of the impacts on the aquifer and vadose zone resulting from the implementation of DPVE.

The following indicators of performance will be reported on a quarterly basis:

- Vacuum measurements at all monitoring wells.
- Depth to water in all monitoring wells.
- Volume of SPL extracted, if any.
- Volume of groundwater extracted.
- Volume of soil vapors extracted.
- Extracted air hydrocarbon concentrations.
- Extracted groundwater hydrocarbon concentrations.
- Groundwater hydrocarbon concentrations in monitoring wells.
- Calculated mass removal.
- Groundwater drawdown map.
- Vacuum influence map.

The results from the subsurface data and measurements will be used to optimize the remediation system. Flow rates and vacuums may be modified at each well as appropriate to maximize contaminant removal. Following any change to the extraction arrangement, the effects on the subsurface will be evaluated to ensure that the desired results were achieved.

12.4 Discharge Monitoring and Reporting

12.4.1 Groundwater

Samples of the groundwater effluent will be collected completed in accordance with the Municipal Authority of Kittanning Permit. The sampling parameters and analytical methods are shown below:

Parameter	Analytical Method	Frequency
Benzene, ethylbenzene, toluene, total xylenes and MTBE	8021 or 8260B	Monthly
pH	APHA Method 4500-H^+-B	Monthly

Samples of the groundwater influent, midfluent and effluent will also be collected to monitor carbon consumption and contaminant mass removal. Influent and midfluent samples will be collected quarterly, at a minimum. Samples will be analyzed more frequently during startup and the first few months of operation because carbon consumption rates are expected to be highest during this time and multiple carbon change-outs are expected. As influent contaminant concentrations decrease over time, carbon consumption rates will also decrease.

12.4.2 Air

Samples of the air influent, midfluent and effluent will be collected quarterly to monitor carbon consumption and contaminant mass removal. The samples will be submitted for laboratory analysis of benzene, ethylbenzene, toluene, xylenes, MTBE and total petroleum hydrocarbons (gasoline range) by method AM 4.02 or M-18 Modified. Samples will be analyzed more frequently during startup and the first few months of operation because carbon consumption rates are expected to be highest during this time and multiple carbon change-outs are expected. As influent contaminant concentrations decrease over time, carbon consumption rates will also decrease.

12.5 Quarterly Groundwater Monitoring and Reporting

Groundwater samples from site monitoring wells will be analyzed on a quarterly basis. They will be submitted for laboratory analysis of benzene, ethylbenzene, cumene, MTBE, naphthalene, toluene, and total xylenes parameters by EPA Method 5030B/8260B. Samples from extraction wells will be analyzed twice per year.

Remedial Action Progress Reports will be submitted quarterly and will include analytical results of quarterly groundwater sampling, remediation system discharge monitoring, performance monitoring and a summary of site activities completed during the quarter.

13.0 ATTAINMENT MONITORING

13.1 Soil

The decision to conduct confirmatory soil sampling will be based on air and groundwater contaminant concentrations in the DPVE system influent and groundwater contaminant concentrations in monitoring wells. When the results indicate that the DPVE system has reached an asymptotic state under various operating scenarios, confirmatory soil sampling will be completed.

Prior to drilling, sampling locations will be pre-selected using a systematic randomized sampling plan. A total of 12 samples will be collected and submitted for laboratory analysis of benzene, ethylbenzene, cumene, MTBE, naphthalene, toluene, and total xylenes by EPA Method 5035/8260B. The results will be compared to the SHS-RUA values.

13.2 Groundwater

Groundwater monitoring will occur quarterly during remediation. Upon achieving the clean-up goal, remediation will be discontinued and quarterly groundwater attainment monitoring will be completed for eight consecutive quarters to demonstrate attainment of the SHS-RUA.

Points of Compliance

Monitoring wells MW-3, MW-4, MW-8, MW-9, MW-10 and MW-12 are selected as point of compliance wells.

14.0 HEALTH AND SAFETY AND QA/QC PROCEDURES

Soil and groundwater sampling, labeling, field-testing and calibration procedures, and decontamination protocols followed industry standards. Quality assurance and control is addressed in the IGI Sampling and Quality Assurance Plan provided as Attachment K. Waste handling is also addressed in the Plan.

IGI personnel who work at this Site are trained in accordance with OSHA 29 CFR1910.120 regulations. A site specific Health & Safety Plan is provided as Attachment L.

15.0 IMPLEMENTATION SCHEDULE

The RAP will be implemented as follows:

Task	Month Number													
	0	1	2	3	4	5	6	7	8	9	10	11	12	13-37
RAP Approval	X													
Complete USTIF Fixed Price Contract for O&M		X	X	X	X	X	X	X	X	X				
Procurement of Contractor & Equipment				X	X	X	X	X	X	X	X			
Install Extraction Wells				X										
Complete Trenching and Install Subsurface Piping					X									
Collect Baseline Performance Monitoring Data					X									
Install Treatment Equipment												X		
System Start-Up, Performance Monitoring													X	
System O & M														x

16.0 POST- REMEDIATION ACTIVITIES

Monitoring wells, extraction wells, pilot testing wells and soil vapor monitoring wells shall be abandoned using the aggregate method in accordance with the Groundwater Monitoring Guidance Manual. Flush mount surface casings shall be removed and the concrete or asphalt surface restored.

Remediation equipment shall be removed to the extent feasible. The power supply will be disconnected, spent carbon and filters will be disposed, and the Municipal Authority of Kittanning will be notified that discharges to the sanitary sewer system have been terminated. Horizontal piping runs will be terminated below grade and capped.

All post remediation activities shall be documented.

17.0 CONCLUSIONS

The remediation treatment system approach is designed to effectively treat the COCs in impacted media and based on the subsurface conditions. The approach utilizes DPVE technology for accelerated contaminant removal of adsorbed phase constituents in soil and dissolved phase constituents in the unconsolidated zone.

TABLES

Table 1.0: Preliminary Soil and Groundwater Assessment – April 2002

Sample ID	Date	Depth (feet)	Parameters						
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Soil (mg/kg)									
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*
B-1 (MW-1)	04/19/02	8 - 10	**1.6**	3.0	1.5	0.41	7.4	2.0	19
B-1 (MW-1)	04/19/02	10 - 12	**1.6**	4.2	0.66	<0.44	2.4	<2.2	7.1
B-1 (MW-1)	04/19/02	12 - 14	**5.4**	40	4.8	<4.6	25	43	180
B-1 (MW-1)	04/19/02	14 - 16	**7.6**	23	<3.9	<3.9	20	25	100
Groundwater (ug/L)									
Statewide Health Standard, Residential, Used Aquifer			*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-1	04/19/02	--	**250**	**2,000**	<100	**560**	**890**	990	**13,000**

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.
3) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 2.0: UST Closure Soil Analytical Results – June 2002

Sample ID	Date	Depth (feet)	Parameters (mg/kg)						
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*
SS-1	06/21/02	10 - 10.5	<0.96 (0.15E)	10	2.4	<0.96	6.4	<4.8	23
SS-2	06/21/02	10 - 10.5	<0.98 (0.15E)	11	3.0	<0.98	5.1	<4.9	37
SS-3	06/21/02	10 - 10.5	<0.44	8.4	2.4	<0.44	9.7	<2.2	54
SS-4	07/02/02	4 - 4.5	<0.72	20	2.8	**5.3**	10	22	140
SS-5	07/02/02	4 - 4.5	0.25	0.15	<0.059	0.28	<0.30	0.36	0.99

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.
3) E indicates laboratory estimates.

Table 3.0: Historical Soil Analytical Results

Sample ID	Date	Depth (feet)	Parameters (mg/kg)						
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*
B-2 (MW-2)	06/26/02	14-16	0.27	16	12	<0.087	7.3	<0.44	29
EW-3	06/27/02	14-16	**2.0**	0.97	1.0	<0.088	4.1	<0.44	3.8
SS-6 (EW-2)	07/05/02	8 - 10	0.18	0.11	<0.085	<0.085	<0.42	<0.42	0.28
MW-3	04/15/04	10 - 12	0.017	<0.0012	<0.0012	<0.0012	<0.0061	<0.0061	<0.0036
MW-3	04/15/04	14 - 16	0.34	<0.048	0.075	<0.048	<0.24	<0.24	0.25
MW-4	04/15/04	10 - 12	<0.0012	<0.0012	<0.0012	<0.0012	<0.0059	<0.0059	<0.0036
MW-5	04/15/04	10 - 12	<0.0011	<0.0011	<0.0011	<0.0011	<0.0054	<0.0054	<0.0033

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 1 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-1	04/19/02	7.58	--	**250**	**2,000**	<100	**560**	**890**	990	**13,000**
MW-1	08/09/02	11.00	--	**1,500**	**1,500**	<100	**1,000**	<500	700	8,100
MW-1	01/16/03	9.45	--	**950**	540	46	**1,400**	**320**	280	4,300
MW-1	MW-1 over-drilled									
MW-1	06/18/03	15.49	84.93	**5,900**	640	<50	**1,800**	66	**1,300**	3,800
MW-1	08/29/03	15.24	85.18	**2,700**	**810**	51	<1.0	**290**	710	2,600
MW-1	06/10/04	13.77	86.65	**2,400**	**810**	<100	**930**	<500	**1,200**	2,900
MW-1	09/27/04	12.02	88.40	**1,900**	650	<100	**1,200**	**210**	**1,200**	4,600
MW-1	12/13/04	14.72	85.70	**3,000**	**940**	<250	**760**	<100	**1,800**	3,400
MW-1	02/25/05	13.33	87.09	**2,000**	**940**	<250	**1,000**	**280**	**1,800**	3,800
MW-1	05/18/05	15.31	85.11	**2,600**	**810**	<100	**940**	**130**	**1,200**	2,500
MW-1	08/11/05	17.62	82.80	**2,800**	680	<200	**1,200**	<330	**1,200**	2,500
MW-1	10/19/05	17.89	82.53	**1,700**	**710**	<50	**780**	**230**	920	2,500
MW-1	01/09/06	15.42	85.00	**2,500**	**1,500**	<500	**910**	**390**	**2,000**	4,800
MW-1	04/11/06	16.19	84.23	**2,700**	**1,800**	<100	**1,000**	**370**	**1,900**	5,200
MW-1	07/19/06	16.38	84.04	**1,700**	**1,100**	51	**490**	**320**	**1,400**	3,900
MW-1	10/16/06	15.48	84.94	**1,900**	**1,500**	77	**530**	**450**	**1,400**	5,200
MW-1	03/20/07	13.27	87.15	**820**	610	<100	**<32**	**440**	570	3,600
MW-1	05/22/07	14.56	85.86	**2,800**	**3,200**	<500	**380**	**2,000**	**2,500**	**12,000**
MW-1	09/24/07	17.67	82.75	**2,800**	**2,000**	<250	**<48**	**660**	**1,500**	6,600
MW-1	11/28/07	17.10	83.32	**2,200**	**1,600**	70	**420**	**440**	880	4,700
MW-1	01/30/08	14.83	85.59	**2,600**	**1,800**	<500	**330**	**320**	**1,400**	6,400
MW-1	04/15/08	12.40	88.02	**1,200**	**2,200**	<250	**<48**	**640**	790	8,400
MW-1	07/07/08	16.37	84.05	**2,600**	**1,400**	<500	**570**	**550**	770	4,300
MW-1	10/14/08	17.93	82.49	**1,500**	**2,600**	<500	**280**	**1,800**	530	7,700
MW-1	01/21/09	15.51	84.91	**1,800**	**2,000**	98	**200**	**510**	510	6,400
MW-1	04/14/09	14.21	86.21	**1,500**	**2,200**	160	<9.6	**860**	560	8,200
MW-1	07/07/09	16.13	84.29	**3,000**	**880**	150	14	**110**	**1,700**	3,000
MW-1	10/26/09	16.91	83.51	**1,300**	**1,400**	64	**140**	**390**	370	4,100
MW-1	02/23/10	15.87	84.55	**1,000**	**2,200**	<200	**<39**	**520**	<1,000	6,900
MW-1	06/22/10	15.02	85.40	**829**	**2,540**	81.5	<1.0	**331**	247	7,360
MW-1	08/31/10	16.98	83.44	**820**	**1,300**	95	**73**	**480**	260	3,900
MW-1	12/21/10	14.73	85.69	**763**	**3,600**	199	14.6	**940**	344	9,690
MW-1	03/24/11	10.79	89.63	**320**	**940**	58	14	**300**	140	2,900
MW-1	06/13/11	13.20	87.22	**506**	**1,670**	70.0	**31.8**	**279**	167	6,080
MW-1	08/15/11	16.81	83.61	**630**	**1,200**	63	**88**	**320**	220	3,500
MW-1	10/07/11	16.53	83.89	**514**	**1,050**	62.4	**60.4**	**310**	208	2,820
MW-1	03/26/12	14.45	85.97	**440**	**1,700**	140	**28**	**540**	180	4,300
MW-1	06/07/12	16.17	84.25	**440**	**1,300**	120	<10	**520**	170	3,200
MW-1	08/29/12	17.29	83.13	**230**	440	38	**36**	**160**	55	930
MW-1	11/14/12	16.41	84.01	**284**	564	37.5	**45.1**	**206**	84.3	1,210
MW-1	02/25/13	14.86	85.56	**380**	730	44	**24**	**200**	<125	2,200
MW-1	06/21/13	15.59	84.83	**180**	570	45	16	**170**	74	1,500
MW-1	12/16/13	16.06	84.36	**250**	**1,200**	90	<20	**390**	100	2,500
MW-1	03/27/14	14.80	85.62	**270**	**1,000**	70	15	**390**	140	3,000
MW-1	06/10/14	14.25	86.17	**373**	**1,550**	214	9.5	**1,210**	455	4,130

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 2 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-2	MW-2 over-drilled									
MW-2	06/18/03	16.02	85.04	**4,400**	**730**	120	**49**	80	650	2,000
MW-2	08/29/03	15.95	85.11	**5,100**	**730**	130	<1.0	**110**	**1,400**	2,200
MW-2	06/10/04	14.43	86.63	**3,500**	**1,000**	<200	**<200**	<200	**1,400**	2,300
MW-2	09/27/04	12.69	88.37	**3,000**	**1,200**	220	<20	**330**	680	2,000
MW-2	12/13/04	15.44	85.62	**3,900**	**750**	120	**<31**	<100	780	1,400
MW-2	02/25/05	14.04	87.02	**3,100**	**890**	160	**<33**	**160**	**1,200**	2,000
MW-2	05/18/05	15.98	85.08	**3,800**	**820**	<200	**<66**	<100	**1,600**	2,500
MW-2	08/11/05	18.31	82.75	**4,000**	520	<100	**260**	**670**	870	1,400
MW-2	10/19/05	18.60	82.46	**4,000**	530	130	**28**	100	420	1,600
MW-2	01/09/06	16.12	84.94	**3,800**	**720**	150	20	**110**	800	1,600
MW-2	04/11/06	16.88	84.18	**5,300**	**960**	<250	**<79**	**170**	**2,100**	2,800
MW-2	07/19/06	16.91	84.15	**4,600**	**1,100**	180	**<32**	**230**	**2,000**	3,500
MW-2	10/16/06	16.18	84.88	**2,200**	**1,300**	260	**23**	**220**	**1,300**	3,200
MW-2	03/20/07	14.00	87.06	**560**	310	<200	**<63**	**130**	<640	<600
MW-2	05/22/07	15.63	85.43	**4,000**	**840**	140	**26**	**160**	**1,800**	2,600
MW-2	09/24/07	18.37	82.69	**3,900**	**710**	150	<20	**120**	630	2,100
MW-2	11/28/07	17.82	83.24	**520**	330	76	<20	13	93	780
MW-2	01/30/08	15.50	85.56	**3,500**	**710**	120	**36**	**110**	**1,500**	2,200
MW-2	04/15/08	13.03	88.03	**2,100**	700	190	<1.0	**130**	910	2,000
MW-2	07/07/08	17.03	84.03	**4,700**	**1,100**	<250	**54**	**210**	**1,900**	3,100
MW-2	10/14/08	18.50	82.56	**1,800**	290	79	<10	<50	260	790
MW-2	01/21/09	16.17	84.89	**3,300**	**830**	140	**23**	**120**	**1,300**	2,600
MW-2	04/14/09	14.89	86.17	**2,700**	**800**	160	13	**150**	**1,300**	2,400
MW-2	07/07/09	16.78	84.28	**3,000**	<50	170	**390**	12	<250	<150
MW-2	10/26/09	17.59	83.47	**2,400**	**820**	130	<9.6	**280**	**1,300**	2,600
MW-2	02/23/10	16.54	84.52	**2,400**	**780**	180	5.2	**120**	**1,400**	2,200
MW-2	06/22/10	16.46	84.60	**1,830**	**801**	161	3.4	**204**	**1,330**	1,230
MW-2	08/31/10	17.61	83.45	**2,000**	**880**	140	<20	**190**	**1,400**	3,000
MW-2	12/21/10	15.41	85.65	**1,240**	297	116	2.4	**103**	227	755
MW-2	03/24/11	11.41	89.65	**660**	220	77	<12	54	130	560
MW-2	06/13/11	13.82	87.24	**1,060**	386	99.2	2.1	78.5	332	858
MW-2	08/15/11	17.48	83.58	**1,600**	600	130	<13	**120**	750	1,900
MW-2	10/07/11	17.27	83.79	**1,740**	554	142	2.5	**136**	797	1,860
MW-2	03/26/12	15.46	85.60	**1,300**	500	140	<5.0	100	440	1,400
MW-2	06/07/12	16.83	84.23	**1,500**	520	120	<10	**110**	670	1,600
MW-2	08/29/12	17.96	83.10	**1,300**	440	100	<10	98	470	1,500
MW-2	11/14/12	17.11	83.95	**1,610**	363	135	2.4	**102**	366	1,140
MW-2	02/25/13	15.55	85.51	**1,400**	350	86	<10	89	550	1,100
MW-2	06/21/13	16.30	84.76	**1,200**	290	98	<10	65	290	860
MW-2	12/16/13	16.77	84.29	**1,600**	330	130	<20	<100	310	1,000
MW-2	03/27/14	15.51	85.55	**1,500**	330	140	<20	89	540	920
MW-2	06/10/14	15.59	85.47	**857**	195	68.9	2.0	67.2	208	544

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample. 3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 3 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-3	04/16/04	11.97	87.51	**310**	<1.0	14	**24**	<5.0	12	24
MW-3	06/10/04	12.92	86.56	**340**	<10	14	15	<50	<50	<30
MW-3	09/27/04	11.09	88.39	**170**	<1.0	6.3	15	<5.0	<5.0	8.2
MW-3	12/13/04	14.75	84.73	**120**	<5.0	<5.0	15	<25	<25	<15
MW-3	02/25/05	12.49	86.99	**99**	<5.0	<5.0	<5.0	<25	<25	<15
MW-3	05/18/05	14.43	85.05	**38**	<1.0	<10	11	<5.0	9.1	13
MW-3	08/11/05	16.71	82.77	**32**	<1.0	<1.0	14	<5.0	<5.0	<3.0
MW-3	10/19/05	16.98	82.50	**23**	<1.0	<1.0	16	<5.0	<5.0	<3.0
MW-3	01/09/06	14.49	84.99	**15**	<1.0	<1.0	18	<5.0	<5.0	<3.0
MW-3	04/11/06	15.28	84.20	**87**	<1.0	1.6	18	<5.0	<5.0	<3.0
MW-3	07/19/06	15.24	84.24	**60**	<1.0	2.7	11	<5.0	<5.0	<3.0
MW-3	10/16/06	14.51	84.97	**94**	<1.0	6.4	8.2	<5.0	<5.0	5.9
MW-3	03/20/07	12.33	87.15	**16**	<1.0	1.0	8.3	<5.0	<5.0	<3.0
MW-3	05/22/07	13.69	85.79	**98**	<1.0	4.8	9.2	6.9	<5.0	5.1
MW-3	09/24/07	16.74	82.74	**14**	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-3	11/28/07	16.08	83.40	**17**	<5.0	<5.0	14	<25	<5.0	<15
MW-3	01/30/08	13.94	85.54	**34**	<1.0	<1.0	7.5	<5.0	<5.0	<3.0
MW-3	04/15/08	11.54	87.94	**180**	<5.0	<5.0	<5.0	<25	<25	<15
MW-3	07/07/08	15.44	84.04	**90**	<1.0	4.1	9.1	<5.0	<5.0	<3.0
MW-3	10/14/08	16.89	82.59	**7.5**	<1.0	<1.0	9.2	<5.0	<5.0	<3.0
MW-3	01/21/09	14.65	84.83	**44**	<1.0	1.3	6.9	<5.0	<5.0	<3.0
MW-3	04/14/09	13.31	86.17	**44**	<1.0	1.9	7.5	<5.0	<5.0	<3.0
MW-3	07/07/09	15.32	84.16	**15**	15	1.9	<1.0	<5.0	<5.0	14
MW-3	10/26/09	16.07	83.41	**25**	<1.0	1.6	10	<5.0	<5.0	<3.0
MW-3	02/23/10	14.94	84.54	**46**	<1.0	4.2	9.3	<5.0	<5.0	<3.0
MW-3	06/22/10	15.01	84.47	**36.6**	<1.0	3.5	10.2	<2.0	2.5	<3.0
MW-3	08/31/10	16.13	83.35	**8.5**	<1.0	<1.0	8.8	<5.0	<5.0	<3.0
MW-3	12/21/10	13.81	85.67	**5.1**	1.8	<1.0	7.2	<2.0	<1.0	4.9
MW-3	03/24/11	9.91	89.57	**52**	<1.0	1.3	1.4	<5.0	<5.0	<3.0
MW-3	06/13/11	12.44	87.04	**34.8**	<1.0	1.8	2.1	2.7	1.1	<3.0
MW-3	08/15/11	15.89	83.59	**15**	<1.0	2.4	3.7	<5.0	<5.0	<3.0
MW-3	10/07/11	15.67	83.81	**24.1**	<1.0	2.4	4.3	<2.0	2.8	<3.0
MW-3	03/26/12	13.62	85.86	**13**	<1.0	1.9	2.3	<5.0	<5.0	<3.0
MW-3	06/07/12	15.26	84.22	**42**	<1.0	4.8	2.4	<5.0	<5.0	3.2
MW-3	08/29/12	16.37	83.11	**9.6**	<1.0	1.1	2.3	<5.0	<5.0	<3.0
MW-3	11/14/12	15.53	83.95	**6.3**	<1.0	<1.0	5.1	<2.0	1.0	<3.0
MW-3	02/25/13	14.02	85.46	**7.0**	<1.0	<1.0	3.6	<5.0	<5.0	<3.0
MW-3	06/21/13	14.71	84.77	**8.9**	<1.0	1.2	2.8	<5.0	<5.0	<3.0
MW-3	12/16/13	15.20	84.28	**5.4**	<1.0	<1.0	2.5	<5.0	<5.0	<3.0
MW-3	03/27/14	13.93	85.55	**6.2**	<1.0	<1.0	2.6	<5.0	<5.0	<3.0
MW-3	06/10/14	13.41	86.07	**13.0**	<1.0	2.4	2.2	<2.0	1.9	<3.0

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 4 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-4	04/16/04	12.52	87.34	**7.9**	<1.0	<1.0	**45**	<5.0	<5.0	<3.0
MW-4	06/10/04	13.56	86.30	<1.0	<1.0	<1.0	14	<5.0	<5.0	3.0
MW-4	09/27/04	11.68	88.18	<1.0	<1.0	<1.0	**22**	<5.0	<5.0	<3.0
MW-4	12/13/04	14.46	85.40	<1.0	<1.0	<1.0	7.9	<5.0	<5.0	<3.0
MW-4	02/25/05	13.13	86.73	<1.0	<1.0	<1.0	15	<5.0	<5.0	<3.0
MW-4	05/18/05	15.08	84.78	<1.0	<1.0	<1.0	4.1	<5.0	<5.0	<3.0
MW-4	08/11/05	17.34	82.52	<1.0	<1.0	<1.0	**60**	<5.0	<5.0	<3.0
MW-4	10/19/05	17.63	82.23	<1.0	<1.0	<1.0	19	<5.0	<5.0	<3.0
MW-4	01/09/06	15.11	84.75	<1.0	<1.0	<1.0	15	<5.0	<5.0	<3.0
MW-4	04/11/06	15.93	83.93	<1.0	<1.0	<1.0	**120**	<5.0	<5.0	<3.0
MW-4	07/19/06	15.89	83.97	<1.0	<1.0	<1.0	13	<5.0	<5.0	<3.0
MW-4	10/16/06	15.17	84.69	<1.0	<1.0	<1.0	**24**	<5.0	<5.0	<3.0
MW-4	03/20/07	12.92	86.94	<1.0	<1.0	<1.0	3.7	<5.0	<5.0	<3.0
MW-4	05/22/07	14.38	85.48	<1.0	<1.0	<1.0	1.5	<5.0	<5.0	<3.0
MW-4	09/24/07	17.39	82.47	<1.0	<1.0	<1.0	7.0	<5.0	<5.0	<3.0
MW-4	11/28/07	16.70	83.16	<1.0	<1.0	<1.0	2.1	<5.0	<1.0	<3.0
MW-4	01/30/08	14.61	85.25	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-4	04/15/08	12.19	87.67	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-4	07/07/08	16.09	83.77	<1.0	<1.0	<1.0	6.2	<5.0	<5.0	<3.0
MW-4	10/14/08	17.54	82.32	1.8	<1.0	<1.0	4.8	<5.0	<5.0	<3.0
MW-4	01/21/09	15.32	84.54	<1.0	<1.0	<1.0	1.5	<5.0	<5.0	<3.0
MW-4	04/14/09	14.03	85.83	<1.0	<1.0	<1.0	2.4	<5.0	<5.0	<3.0
MW-4	07/07/09	15.99	83.87	<1.0	<1.0	<1.0	16	<5.0	<5.0	<3.0
MW-4	10/26/09	16.73	83.13	<1.0	<1.0	<1.0	10	<5.0	<5.0	<3.0
MW-4	02/23/10	15.69	84.17	1.1	<1.0	<1.0	3.4	<5.0	<5.0	<3.0
MW-4	06/22/10	15.69	84.17	<1.0	1.3	<1.0	5.2	2.2	<1.0	4.5
MW-4	08/31/10	16.81	83.05	<1.0	<1.0	<1.0	10	<5.0	<5.0	<3.0
MW-4	12/21/10	14.48	85.38	<1.0	1.2	<1.0	1.1	<2.0	<1.0	3.5
MW-4	03/24/11	10.47	89.39	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-4	06/13/11	13.10	86.76	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0
MW-4	08/15/11	16.56	83.30	1.2	<1.0	<1.0	3.0	<5.0	<5.0	<3.0
MW-4	10/07/11	16.33	83.53	<1.0	<1.0	<1.0	2.2	7.7	<1.0	<3.0
MW-4	03/26/12	14.29	85.57	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-4	06/07/12	15.94	83.92	<1.0	<1.0	<1.0	1.7	<5.0	<5.0	<3.0
MW-4	08/29/12	16.91	82.95	<1.0	<1.0	<1.0	1.6	<5.0	<5.0	<3.0
MW-4	11/14/12	16.16	83.70	<1.0	<1.0	<1.0	1.2	<2.0	<1.0	<3.0
MW-4	02/25/13	14.69	85.17	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-4	06/21/13	15.35	84.51	<1.0	<1.0	<1.0	1.4	<5.0	<5.0	<3.0
MW-4	12/16/13	15.82	84.04	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-4	03/27/14	14.57	85.29	<1.0	<1.0	<1.0	1.1	<5.0	<5.0	<3.0
MW-4	06/10/14	14.10	85.76	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 5 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-5	04/16/04	16.59	87.94	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	06/10/04	17.39	87.14	1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	09/27/04	15.67	88.86	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	12/13/04	18.61	85.92	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	02/25/05	17.10	87.43	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	05/18/05	19.02	85.51	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	08/11/05	21.48	83.05	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	10/19/05	21.75	82.78	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	01/09/06	19.27	85.26	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	04/11/06	19.99	84.54	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	07/19/06	19.91	84.62	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	10/16/06	19.24	85.29	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	03/20/07	17.18	87.35	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	05/22/07	18.20	86.33	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	09/24/07	21.48	83.05	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	11/28/07	21.07	83.46	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0
MW-5	01/30/08	18.44	86.09	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	04/15/08	16.05	88.48	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	07/07/08	20.14	84.39	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	10/14/08	21.62	82.91	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	01/21/09	19.15	85.38	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	04/14/09	17.85	86.68	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	07/07/09	19.66	84.87	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	10/26/09	20.60	83.93	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	02/23/10	19.53	85.00	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	06/22/10	19.36	85.17	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0
MW-5	08/31/10	20.55	83.98	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-5	Sampling was discontinued for MW-5 following eight or more quarters of results below the SHS-RUA.									

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 6 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-6	05/18/04	13.79	86.12	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	06/10/04	13.74	86.17	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	09/27/04	11.82	88.09	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	12/13/04	14.56	85.35	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	02/25/05	13.28	86.63	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	05/18/05	15.27	84.64	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	08/11/05	17.51	82.40	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	10/19/05	17.80	82.11	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	01/09/06	15.22	84.69	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	04/11/06	16.09	83.82	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	07/19/06	16.04	83.87	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	10/16/06	15.31	84.60	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	03/20/07	12.98	86.93	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	05/22/07	14.56	85.35	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	09/24/07	17.55	82.36	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	11/28/07	16.80	83.11	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0
MW-6	01/30/08	14.79	85.12	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	04/15/08	12.18	87.73	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	07/07/08	16.24	83.67	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	10/14/08	17.69	82.22	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	01/21/09	15.47	84.44	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	04/14/09	14.19	85.72	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	07/07/09	16.16	83.75	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	10/26/09	16.89	83.02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	02/23/10	15.86	84.05	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	06/22/10	15.89	84.02	<1.0	1.2	<1.0	<1.0	<2.0	<1.0	3.9
MW-6	08/31/10	16.98	82.93	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-6	Sampling was discontinued for MW-6 following eight or more quarters of results below the SHS-RUA.									

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 7 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-7	05/18/04	16.12	86.35	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	06/10/04	16.10	86.37	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	09/27/04	14.23	88.24	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	12/13/04	16.93	85.54	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	02/25/05	15.68	86.79	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	05/18/05	17.62	84.85	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	08/11/05	19.90	82.57	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	10/19/05	20.16	82.31	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	01/09/06	17.63	84.84	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	04/11/06	18.43	84.04	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	07/19/06	18.41	84.06	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	10/16/06	17.68	84.79	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	03/20/07	15.45	87.02	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	05/22/07	16.91	85.56	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	09/24/07	19.92	82.55	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	11/28/07	19.16	83.31	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0
MW-7	01/30/08	17.15	85.32	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	04/15/08	14.71	87.76	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	07/07/08	18.59	83.88	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	10/14/08	20.05	82.42	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	01/21/09	17.83	84.64	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	04/14/09	16.49	85.98	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	07/07/09	18.51	83.96	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	10/26/09	19.23	83.24	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	02/23/10	18.21	84.26	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	06/22/10	18.21	84.26	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	3.0
MW-7	08/31/10	19.32	83.15	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-7	Sampling was discontinued for MW-6 following eight or more quarters of results below the SHS-RUA.									
MW-8	06/07/12	15.60	84.59	**450**	200	15	**150**	<50	100	820
MW-8	06/21/12	16.27	83.92	**2,300**	**740**	31	**1,000**	**130**	520	3,500
MW-8	06/28/12	16.42	83.77	**2,700**	630	27	**1,100**	**140**	420	2,700
MW-8	08/29/12	17.07	83.12	**3,300**	330	18	**2,500**	<50	80	1,000
MW-8	11/14/12	16.21	83.98	**3,070**	473	24.4	**2,050**	89.5	131	801
MW-8	02/25/13	14.67	85.52	**4,500**	**2,200**	94	**240**	**440**	900	8,900
MW-8	06/21/13	15.41	84.78	**2,300**	**970**	<50	**450**	**220**	390	3,200
MW-8	12/16/13	15.86	84.33	**3,900**	**1,400**	59	**1,200**	**240**	430	3,100
MW-8	03/27/14	14.51	85.68	**4,000**	**2,500**	97	**190**	**730**	920	**11,000**
MW-8	06/10/14	14.02	86.17	**2,370**	**1,570**	83.5	**211**	**573**	479	5,230
MW-8D	10/25/13	16.52	83.51	**33**	21	3.6	2.9	5.1	<5.0	160
MW-8D	12/16/13	15.61	84.42	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-8D	03/27/14	14.34	85.69	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-8D	06/10/14	13.81	86.22	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 8 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-9	06/07/12	16.04	84.25	**330**	89	20	**130**	<50	<50	78
MW-9	06/21/12	16.35	83.94	**460**	200	31	**1,200**	65	17	230
MW-9	06/28/12	16.53	83.76	**400**	160	25	**1,600**	52	17	190
MW-9	08/29/12	17.15	83.14	**350**	250	23	**2,700**	<50	<50	260
MW-9	11/14/12	16.30	83.99	**378**	227	32.5	**572**	22.7	8.9	158
MW-9	02/25/13	14.78	85.51	**1,300**	**1,300**	92	**55**	**250**	<125	1,500
MW-9	06/21/13	15.48	84.81	**210**	150	<25	**89**	<25	<125	<75
MW-9	12/16/13	15.96	84.33	**50**	46	10	**56**	<5.0	<5.0	30
MW-9	03/27/14	14.71	85.58	**350**	340	26	**38**	66	8.3	160
MW-9	06/10/14	14.15	86.14	**1,330**	**1,310**	85.1	**20.3**	**425**	55.1	1,320
MW-10	10/25/13	16.91	83.33	**190**	<1.0	4.0	3.6	<5.0	<5.0	3.5
MW-10	12/16/13	15.88	84.36	**180**	<1.0	2.4	2.8	<5.0	<5.0	<3.0
MW-10	03/27/14	14.68	85.56	**160**	<1.0	3.0	3.4	<5.0	<5.0	<3.0
MW-10	06/10/14	14.05	86.19	**87.5**	<1.0	6.6	4.4	<2.0	1.4	<3.0
MW-10D	10/25/13	16.53	83.32	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-10D	12/16/13	15.48	84.37	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-10D	03/27/14	14.31	85.54	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-10D	06/10/14	13.79	86.06	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0
MW-11	10/25/13	17.16	83.26	<5.0	21	190	<5.0	<25	<25	<15
MW-11	12/16/13	16.17	84.25	<3.3	29	160	<10	<50	<50	<30
MW-11	03/27/14	14.91	85.51	<1.0	3.6	57	<1.0	5.4	<5.0	<3.0
MW-11	06/10/14	14.31	86.11	<1.0	5.5	49.6	<1.0	3.0	<1.0	4.6
MW-12	10/25/13	16.48	82.53	**52**	<1.0	6.2	5.5	<5.0	5.5	9.5
MW-12	12/16/13	15.48	83.53	**79**	<1.0	6.6	5.3	<5.0	6.3	9.4
MW-12	03/27/14	14.22	84.79	**36**	<1.0	3.8	4.3	<5.0	<5.0	<3.0
MW-12	06/10/14	13.72	85.29	**21.8**	<1.0	4.8	3.2	<2.0	1.2	<3.0
MW-12D	10/25/13	16.33	82.59	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-12D	12/16/13	15.26	83.66	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-12D	03/27/14	14.08	84.84	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-12D	06/10/14	13.58	85.34	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 9 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
EW-1	08/09/02	16.17	83.51	**1,100**	35	<25	**560**	<120	200	500
EW-1	09/18/02	--	--	**36**	<5.0	<5.0	12	<25	<25	<15
EW-1	08/29/03	14.49	85.19	**81**	1.4	<1.0	**58**	<5.0	<5.0	7.0
EW-1	04/14/05	--	--	**21**	1.1	--	13	--	<5.0	5.7
EW-1	05/18/05	14.53	85.15	**1,800**	220	<200	**440**	<100	<1,000	700
EW-1	08/11/05	16.88	82.80	**630**	44	<25	**120**	<100	<120	290
EW-1	10/19/05	17.02	82.66	**540**	92	<10	**180**	<50	62	360
EW-1	01/09/06	--	--	NS	NS	NS	NS	NS	NS	NS
EW-1	04/11/06	15.33	84.35	**92**	3.4	<1.0	**34**	<5.0	5.0	14
EW-1	07/19/06	16.68	83.00	**5,600**	370	<200	<63	220	910	2,600
EW-1	10/16/06	14.98	84.70	**170**	10	1.8	**70**	6	19	100
EW-1	03/20/07	12.80	86.88	**510**	390	17	**45**	**130**	180	1,900
EW-1	05/22/07	13.77	85.91	**640**	260	<10	**140**	**480**	280	2,700
EW-1	09/24/07	16.97	82.71	**130**	20	1.4	<1.0	14	15	220
EW-1	11/28/07	16.51	83.17	**340**	26	<10	**91**	<50	42	560
EW-1	01/30/08	14.13	85.55	**240**	91	4.7	**40**	39	58	560
EW-1	04/15/08	11.60	88.08	**170**	87	6.4	<1.0	48	35	620
EW-1	07/07/08	16.24	83.44	NS	NS	NS	NS	NS	NS	NS
EW-1	10/14/08	17.32	82.36	**89**	48	3.3	**35**	23	16	260
EW-1	01/21/09	14.75	84.93	NS	NS	NS	NS	NS	NS	NS
EW-1	04/14/09	13.46	86.22	**390**	390	14	**34**	**120**	100	1,800
EW-1	07/07/09	15.38	84.30	**250**	65	<10	**45**	<50	<50	280
EW-1	10/26/09	16.09	83.59	**1,600**	**2,100**	68	**120**	**490**	490	7,200
EW-1	02/23/10	15.10	84.58	**230**	280	13	20	75	64	1,000
EW-1	--	--	--	Sampling of extraction wells was discontinued.						
EW-2	08/09/02	14.39	86.11	**13,000**	**1,800**	<500	**35,000**	<2,500	**24,000**	9,900
EW-2	09/18/02	--	--	**1,100**	<50	<50	**17,000**	<250	250	160
EW-2	08/29/03	--	--	NS	NS	NS	NS	NS	NS	NS
EW-2	05/18/05	15.48	85.02	**12,000**	**1,500**	<1,100	**15,000**	<25,000	**17,000**	**12,000**
EW-2	05/20/05	--	--	**1,200**	210	<25	**1,600**	<100	970	1,000
EW-2	05/20/05	--	--	**5,000**	**1,000**	<200	**6,600**	**220**	**6,800**	5,700
EW-2	08/11/05	17.76	82.74	**8,300**	370	<100	**23,000**	**320**	**8,200**	9,100
EW-2	10/19/05	18.15	82.35	**9,000**	**8,700**	<5,000	**25,000**	**22,000**	**15,000**	**55,000**
EW-2	01/09/06	15.58	84.92	Not sampled due to presence of SPL						
EW-2	04/11/06	16.33	84.17	Not sampled due to presence of SPL						
EW-2	07/19/06	16.39	84.11	**14,000**	**2,400**	<250	**13,000**	**850**	**23,000**	**14,000**
EW-2	10/16/06	15.60	84.90	**24,000**	**5,900**	490	**7,100**	**1,300**	**35,000**	**31,000**
EW-2	03/20/07	13.40	87.10	Not sampled due to presence of SPL						
EW-2	05/22/07	14.72	85.78	Not sampled due to presence of SPL						
EW-2	09/24/07	17.78	82.72	Not sampled due to presence of SPL						
EW-2	11/28/07	--	--	Not sampled due to presence of SPL						
EW-2	01/30/08	15.03	85.47	Not sampled due to presence of SPL						
EW-2	04/15/08	--	--	Not sampled due to presence of SPL						
EW-2	07/07/08	16.52	83.98	Not sampled due to presence of SPL						
EW-2	10/14/08	17.94	82.56	Not sampled due to presence of SPL						
EW-2	01/21/09	15.71	84.79	Not sampled due to presence of SPL						
EW-2	04/14/09	14.49	86.01	Not sampled due to presence of SPL						
EW-2	07/07/09	16.22	84.28	Not sampled due to presence of SPL						
EW-2	02/23/10	16.10	84.40	Not sampled due to presence of SPL						
EW-2	--	--	--	Sampling of extraction wells was discontinued.						

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample. 3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 4.0: Historical Groundwater Analytical Results *(page 10 of 10)*

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
EW-3	08/09/02	16.96	83.90	**450**	65	16	**780**	9.1	140	130
EW-3	09/18/02	--	--	**17**	<5.0	<5.0	**1,700**	<25	<25	<15
EW-3	08/29/03	15.68	85.18	**4,100**	360	180	**2,500**	**120**	<250	260
EW-3	04/14/05	--	--	**97**	13	--	**62**	--	<5.0	44
EW-3	04/14/05	--	--	**410**	<120	--	**140**	--	<1,000	<380
EW-3	05/18/05	15.70	85.16	<1.0	<1.0	<1.0	**140**	<5.0	<5.0	<3.0
EW-3	08/11/05	18.05	82.81	**6.8**	1.2	<1.0	**190**	<5.0	<5.0	4.1
EW-3	10/19/05	--	--	NS	NS	NS	NS	NS	NS	NS
EW-3	01/09/06	--	--	NS	NS	NS	NS	NS	NS	NS
EW-3	04/11/06	--	--	NS	NS	NS	NS	NS	NS	NS
EW-3	07/19/06	16.52	84.34	**18**	1.0	<1.0	**58**	<5.0	<5.0	3.2
EW-3	10/16/06	15.97	84.89	**170**	24	--	**260**	--	7.3	36
EW-3	03/20/07	13.70	87.16	**270**	55	11	**140**	<25	<25	61
EW-3	05/22/07	14.93	85.93	**230**	44	12	**200**	<25	<25	28
EW-3	09/24/07	18.35	82.51	**310**	34	9.2	<5	14	<25	18
EW-3	11/28/07	19.16	81.70	**150**	14	6.6	**120**	<25	<5.0	<15
EW-3	01/30/08	15.19	85.67	**450**	62	17	**210**	22	9.2	25
EW-3	04/15/08	13.09	87.77	**170**	19	10	**54**	<25	<25	15
EW-3	07/07/08	16.78	84.08	NS	NS	NS	NS	NS	NS	NS
EW-3	10/14/08	18.21	82.65	**140**	6.2	8.7	**60**	5.9	<5.0	8.7
EW-3	01/21/09	15.92	84.94	NS	NS	NS	NS	NS	NS	NS
EW-3	04/14/09	14.80	86.06	**180**	9.4	6.8	**35**	4.7	8.8	15
EW-3	07/07/09	16.52	84.34	**160**	9.1	7.3	13	<5.0	<5.0	9.1
EW-3	10/26/09	17.59	83.27	**380**	9.7	11	15	42	<25	31
EW-3	02/23/10	16.25	84.61	**320**	73	32	**35**	<25	<25	46
EW-2	--	--	--	Sampling of extraction wells was discontinued.						
IP-1	06/07/12	14.50	--	**240**	**1,200**	86	<13	**260**	660	5,200
IP-1	06/11/12	10.67	--	**33**	160	17	<1.0	48	100	500
IP-1	06/14/12	14.42	--	**70**	240	18	<5.0	92	140	830
IP-1	06/21/12	14.94	--	**190**	540	30	5.1	140	540	2,200
IP-1	06/28/12	15.21	--	**380**	580	34	6.0	**170**	750	2,400
IP-1	07/13/12	15.73	--	**710**	680	35	11	**190**	**1,200**	3,100
IP-1	02/25/13	--	--	**4,900**	**2,100**	84	**110**	**480**	**3,400**	8,100
IP-1	06/21/13	--	--	**4,700**	**2,000**	<100	**89**	**530**	**1,200**	3,800

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) DUP = blind duplicate sample.
3) NS = not sampled.
4) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 5.0: Soil Vapor Analytical Results

Sample ID	Date	Parameters (mg/m3)								
		Benzene	**Ethyl-benzene**	**Cumene**	**MTBE**	**Naph-thalene**	**Toluene**	**m&p-Xylene**	**o-Xylene**	**(total Xylene)**
Non-Residential MSC_{IAQ}:		*0.011*	*0.073*	*1.1*	*0.31*	*0.0088*	*1.2*	--	--	*0.3*
Non-Residential MSC_{SG}:		***1.1***	***7.3***	***110***	***31***	***0.88***	***120***			***30***
Residential MSC_{IAQ}:		*0.0027*	*0.019*	*0.54*	*0.081*	*0.0042*	*0.56*	--	--	*0.14*
Residential MSC_{SG}:		***0.27***	***1.9***	***54***	***8.1***	***0.42***	***56***			***14***
GP-1 (VP-1)	03/07/05	<0.012	<0.016	<0.018	<0.014	<0.020	<0.014	<0.033	<0.016	<0.049
VP-1	08/19/14	0.0019	0.0078	0.0011	<0.00072	0.010	0.031	0.036	0.013	0.049
VP-2	08/19/14	0.00067	0.0012	<0.00098	<0.00072	0.0049	0.0045	0.0056	0.0022	0.0078
GP-3 (VP-3)	03/07/05	<0.012	<0.016	<0.018	<0.014	<0.020	0.026	<0.033	<0.016	<0.049
VP-3	08/19/14	0.0064	0.0074	<0.00098	<0.00072	0.0046	0.38	0.028	0.0095	0.038

Notes: 1) Concentrations exceeding the Residential or Nonresidential MSC_{SG} are shown in **bold**.
2) Samples were analyzed by method TO-15A.
3) MSC_{SG} calculated as follows: $MSC_{SG} = MSC_{IAQ} \div TF$, where TF = 0.01

Table 6.0: Summary of Separate Phase Liquid Recovery

Quarter	Volume of SPL Recovered (gallons)			
	EW-2	IW-1	IW-2	Vacuum Extraction
3rd Quarter 2004	4.5	--	--	--
4th Quarter 2004	4.9	0	--	4.5
1st Quarter 2005	10.4	0	0.4	--
2nd Quarter 2005	2.4	0.2	0	--
3rd Quarter 2005	7.2	0	0.4	--
4th Quarter 2005	7.7	0.2	0	--
1st Quarter 2006	10	0.4	0	--
2nd Quarter 2006	2.4	0	0	--
3rd Quarter 2006	6.169	0	0	--
4th Quarter 2006	5.955	0.23	0	--
1st Quarter 2007	4.584	0.184	0	--
2nd Quarter 2007	2.717	0	0	--
3rd Quarter 2007	0.3	0	0	--
4th Quarter 2007	0	0	0	--
1st Quarter 2008	1.29	0	0	--
2nd Quarter 2008	2	--	--	--
3rd Quarter 2008	0.1	0	0	--
4th Quarter 2008	0	0	0	--
1st Quarter 2009	0.7	0	0	--
2nd Quarter 2009	1.39	0.15	0	--
3rd Quarter 2009	0	0	0	--
4th Quarter 2009	0.23	0	0	--
1st Quarter 2010	0.3	0	0	--
2nd Quarter 2010	0.23	0	0	--
3rd Quarter 2010	0	0	0	--
4th Quarter 2010	0	0	0	--
1st Quarter 2011	0	0	0	--
2nd Quarter 2011	0	0	0	--
3rd Quarter 2011	0	0	0	--
4th Quarter 2011	0	0	0	--
1st Quarter 2012	0	0	0	--
2nd Quarter 2012	0	0	0	--
3rd Quarter 2012	0	0	0	--
4th Quarter 2012	0	0	0	--
1st Quarter 2013	0	0	0	--
2nd Quarter 2013	0	0	0	--
3rd Quarter 2013	0	0	0	--
4th Quarter 2013	0	0	0	--
1st Quarter 2014	0	0	0	--
2nd Quarter 2014	0	0	0	--
Well Totals	**75.465**	**1.364**	**0.8**	**4.5**
TOTAL	**82.129**			

Table 7.0: Summary of Groundwater Pump and Treat System Operation

Quarter	Total Gallons	Influent Total Contaminant Concentration (ug/L)	Mass Removed (lbs)
3rd Qaurter 2004	1,949	147.4	0.0024
4th Qaurter 2004	115,494	147.4	0.142
1st Quarter 2005	41,640	147.4	0.051
2nd Quarter 2005	54,942	40.8 - 3,160	1.0847
3rd Quarter 2005	10,482	1,084 - 3,160	0.095
4th Quarter 2005	97,228	1,234	0.48
1st Quarter 2006	131,237	1,234	1.35
2nd Quarter 2006	49,145	148.4	0.0603
3rd Quarter 2006	100,521	9,700	8.2
4th Quarter 2006	195,090	437	0.7
1st Quarter 2007	155,966	1,854.5	2.4
2nd Quarter 2007	175,243	2,507	3.7
3rd Quarter 2007	178,101	392.5	0.58
4th Quarter 2007	188,189	675	1.06
1st Quarter 2008	225,681	914	1.72
2nd Quarter 2008	99,927	617	0.514
3rd Quarter 2008	60,453	617	0.312
4th Quarter 2008	29,674	352	0.0874
1st Quarter 2009	20,207	352	0.059041
2nd Quarter 2009	30,785	1,554	0.4
3rd Quarter 2009	32,409	419.5	0.114
4th Quarter 2009	40,341	6,278.5	2.12
1st Quarter 2010	31,027	1,094	0.286
TOTAL	**2,065,728**		**25.517841**

Table 8.0: Soil Investigation – February 2011

Sample ID	Date	Depth (feet)	Parameters (mg/kg)							
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)	Total Organic Carbon
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*	--
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*	--
P-1	02/08/11	8 - 12	0.018	0.14	0.032	<0.0012	0.076	0.0097	0.30	--
P-1	02/08/11	12 - 16	**9.0**	**89**	8.5	<1.3	22	37	470	--
P-1	02/08/11	20 - 20.5	**1.7**	4.6	0.76	0.14	2.3	0.41	22	--
P-2	02/08/11	8 - 12	0.010	0.0028	0.0029	0.023	<0.0060	<0.0060	0.0065	--
P-2	02/08/11	16 - 20	**2.6**	11	1.3	<0.35	3.0	19	53	--
P-3	02/10/11	11 - 12	**0.96**	20	<6.0	<0.60	12	<30	62	--
P-3	02/10/11	16 - 17.5	**0.98**	13	2.1	<0.61	7.4	<3.0	64	--
P-3	02/10/11	19.5 - 20	<0.0055	<0.0055	<0.0055	<0.0055	<0.027	<0.027	<0.016	--
P-4	02/09/11	8 - 10	--	--	--	--	--	--	--	6,100
P-4	02/09/11	10 - 12	**0.64**	0.47	0.20	<0.060	0.34	<0.30	0.40	--
P-4	02/09/11	16 - 18	0.47	0.54	0.17	<0.044	<0.22	<0.22	0.78	--
P-4	02/09/11	20 - 23	**5.4**	42	4.4	<1.2	<20	<20	200	--
P-5	02/08/11	10 - 12	0.0026	<0.0012	<0.0012	<0.0012	<0.0060	<0.0060	0.0062	--
P-5	02/08/11	12 - 16	**2.0**	25	10	<0.49	5.3	6.8	120	--
P-5	02/08/11	20 - 21	0.33	0.55	0.36	<0.12	<0.63	<0.63	2.0	--
P-5	02/08/11	21 - 22	<0.0011	0.0011	<0.0011	<0.0011	<0.0056	<0.0056	0.0045	--
P-6	02/09/11	11 - 12	--	--	--	--	--	--	--	6,000
P-6	02/09/11	12 - 14	**1.2**	11	7.3	<0.33	4.6	<1.6	17	--
P-6	02/09/11	20 - 24	0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0055	<0.0033	--
P-7	02/10/11	10 - 12	<0.0060	<0.0060	<0.0060	<0.0060	<0.030	<0.030	<0.018	4,600
P-7	02/10/11	12 - 16	0.15	1.8	2.6	<0.058	3.4	<0.29	3.5	--
P-7	02/10/11	17.5 - 19.5	<0.0061	0.0068	<0.0061	0.12	<0.031	<0.031	<0.018	--
P-8	02/10/11	10 - 12	<0.0060	<0.0060	<0.0060	<0.0060	<0.030	<0.030	<0.018	--
P-8	02/10/11	12 - 16	0.23	7.4	2.4	<0.060	6.8	<0.30	12	--
P-10	02/09/11	8 - 12	<0.18	3.5	1.4	<0.50	<2.5	<2.5	6.5	--
P-10	02/09/11	12 - 16	**1.2**	22	3.4	<0.11	9.2	<0.57	18	--
P-11	02/09/11	16 - 20	<1.5	52	6.6	<1.2	<22	<22	82	--
P-11	02/09/11	20 - 23	<0.21	6.6	0.90	<0.62	<3.1	<3.1	21	--
P-12	02/08/11	10 - 12	<0.41	6.3	2.3	<0.41	5.4	<2.0	13	--
P-12	02/08/11	12 - 16	<0.43	27	3.6	<0.43	14	<2.2	69	--
P-13	02/09/11	8 - 12	0.071	4.6	1.2	<0.043	2.2	<0.22	20	--
P-13	02/09/11	15 - 16	<0.044	4.2	1.3	<0.044	2.9	<0.22	1.7	--

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.

Table 9.0: Soil and Groundwater Investigation – June 2012

Sample ID	Date	Depth / Depth to Water (feet)	Parameters						
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Soil (mg/kg)									
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*
MW-8	06/06/12	10 - 13.3	<0.17	7.6	1.6	<0.60	4.0	0.32	20
MW-9	06/07/12	10 - 12.6	**0.78**	0.071	0.053	<0.0012	0.021	0.037	0.10
PT-8N	06/05/12	10 - 12.5	**2.4**	62	7.3	<1.6	25	3.2	120
PT-8N	06/05/12	12.5 - 15	**<1.4**	53	6.9	<1.3	**26**	5.1	190
PT-8N	06/05/12	15 - 16	**0.58**	15	1.3	<0.056	4.8	2.0	58
PT-4N	06/06/12	10 - 11.5	**4.7**	54	7.2	<1.2	**28**	3.1	94
PT-4N	06/06/12	15 - 16	**0.83**	3.3	0.29	<0.56	2.6	1.2	12
IP-1	06/05/12	10 - 12.7	**1.9**	**98**	8.7	<0.45	**27**	2.0	320
IP-1	06/05/12	15 - 17.5	**8.7**	53	5.8	<0.48	17	36	270
PT-2S	06/05/12	10 - 12	**2.2**	21	3.8	<0.48	9.0	1.2	50
PT-2S	06/05/12	12 - 14	**4.2**	**79**	8.5	<0.98	**27**	48	420
PT-2S	06/05/12	15 - 17	**8.5**	38	3.0	<1.0	12	69	190
PT-4S	06/05/12	10 - 12.5	**3.3**	35	5.8	<0.84	13	2.0	62
PT-4S	06/05/12	12.5 - 15	**5.2**	**74**	8.9	<0.51	**31**	11	700
PT-4S	06/05/12	15 - 17	**2.0**	5.1	0.51	<0.41	2.5	8.5	21
PT-8S	06/05/12	10 - 10.5	0.35	6.9	2.3	<0.49	3.5	0.43	2.0
PT-8S	06/05/12	12.5 - 15	0.26	11	2.1	<0.43	5.4	0.28	14
PT-8S	06/05/12	15 - 17	**0.52**	12	1.3	<0.60	4.6	37	70
Groundwater (ug/L)									
Statewide Health Standard, Residential, Used Aquifer			*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-8	06/07/12	15.60	**450**	200	15	**150**	<50	100	820
MW-9	06/07/12	16.04	**330**	89	20	**130**	<50	<50	78
PT-8N	06/07/12	--	**1,700**	**1,600**	71	**330**	**170**	330	2,900
PT-4N	06/07/12	--	**4,100**	**3,100**	180	<270	**720**	**6,000**	**12,000**
PT-2N	06/07/12	--	**6,800**	**3,400**	140	<66	**650**	**8,700**	**15,000**
IP-1	06/07/12	--	**240**	**1,200**	86	<13	**260**	660	5,200
PT-2S	06/07/12	--	**8,300**	**2,500**	88	**200**	**440**	**3,500**	**11,000**
PT-4S	06/07/12	--	**4,200**	**1,900**	140	**410**	**440**	**2,700**	7,300
PT-8S	06/07/12	--	**1,600**	**950**	60	**3,600**	**140**	**5,800**	3,600

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.
3) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 10.0: Soil Investigation (Post Klozur Injection) – July 2012

Sample ID	Date	Depth (feet)	Parameters (mg/kg)						
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*
SB-8S	07/10/12	10 - 12	**0.58**	18	7.4	<0.27	15	0.75	7.1
SB-8S	07/10/12	12 - 14	**1.6**	**77**	16	<0.61	**34**	2.0	76
SB-8S	07/10/12	15 - 17	**8.0**	**94**	11	<1.4	**33**	**200**	420
SB-4S	07/10/12	10 - 12	**0.99**	3.7	1.1	<0.24	2.2	0.31	5.1
SB-4S	07/10/12	12 - 14	**8.6**	**120**	15	<1.3	**45**	5.0	490
SB-4S	07/10/12	15 - 17	**17**	**140**	16	<0.71	**59**	**180**	690
SB-2S	07/10/12	10 - 12	**2.8**	12	3.7	<0.27	9.0	1.6	29
SB-2S	07/10/12	12 - 13	**19**	**180**	19	<0.33	**58**	65	810
SB-2S	07/10/12	15 - 17	**14**	**72**	7.2	<0.26	24	**120**	360
SB-1S	07/10/12	10 - 12.5	**1.6**	**190**	31	<0.50	**82**	2.5	330
SB-1S	07/10/12	15 - 17.5	**1.7**	12	1.5	<0.11	5.9	11	61
SB-MW-8	07/10/12	10 - 13	**0.61**	0.35	0.11	<0.013	0.12	0.14	1.2
SB-1N	07/10/12	10 - 12.5	**1.2**	43	8.6	<0.49	14	1.4	84
SB-1N	07/10/12	15 - 17.5	**1.2**	17	2.2	<0.23	7.9	5.5	82
SB-4N	07/10/12	10 - 11.5	**2.5**	53	7.4	<0.62	25	1.1	120
SB-4N	07/10/12	15 - 17	**21**	**84**	9.3	<1.3	**34**	74	400
SB-8N	07/10/12	10 - 12	**1.9**	**85**	11	<1.3	**34**	2.5	360
SB-8N	07/10/12	12 - 14	**2.7**	58	7.0	<0.50	24	2.2	240
SB-8N	07/10/12	15 - 16	0.44	4.0	0.36	<0.012	2.7	1.1	17
SB-P2	07/10/12	10 - 12	0.29	19	10	<0.081	24	0.43	4.1
SB-P2	07/10/12	15 - 17	**1.7**	23	3.5	<0.13	8.2	1.7	110
SB-P3	07/10/12	11 - 12	**0.96**	3.6	2.4	<0.18	1.7	0.83	13
SB-P3	07/10/12	15 - 16	**1.2**	3.4	0.39	0.12	1.9	0.30	13
SB-P4	07/10/12	10 - 12	0.31	0.44	0.099	<0.012	0.073	0.072	0.56
SB-P4	07/10/12	15 - 16	**1.9**	22	2.8	<0.12	8.1	0.83	79
SB-P4	07/10/12	20 - 22	0.11	0.25	0.011	0.014	0.026	0.10	0.80

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.

Table 11.0: Soil and Groundwater Investigation – October 2013

Sample ID	Date	Depth / Depth to Water (feet)	Parameters						
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Soil (mg/kg)									
Statewide Health Standard, Direct Contact, Residential 0-15 feet			*57*	*10,000*	*7,700*	*1,700*	*4,400*	*10,000*	*1,900*
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*
MW-10D	10/08/13	14-16	<0.0012	<0.0012	0.0028	<0.0012	<0.0060	<0.0060	0.0044
MW-11	10/08/13	17-19	<0.18	0.51	3.4	<0.18	0.92	<0.91	0.57
MW-12D	10/14/13	13-15	0.012	<0.0011	0.0011	<0.0011	<0.0056	<0.0056	0.0088
Groundwater (ug/L)									
Statewide Health Standard, Residential, Used Aquifer			*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
MW-8D	10/25/13	16.52	**33**	21	3.6	2.9	5.1	<5.0	160
MW-10	10/25/13	16.91	**190**	<1.0	4.0	3.6	<5.0	<5.0	3.5
MW-10D	10/25/13	16.53	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0
MW-11	10/25/13	17.16	<5.0	21	190	<5.0	<25	<25	<15
MW-12	10/25/13	16.48	**52**	<1.0	6.2	5.5	<5.0	5.5	9.5
MW-12D	10/25/13	16.33	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<3.0

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Soil samples were analyzed by EPA method 5035/8260B.
3) Groundwater samples were analyzed by EPA method 5030B/8260B.

Table 12.0: Current Groundwater Analytical Results – June 2014

Well ID	Date	Depth to Water (feet)	GW Elevation (feet)	Parameters (ug/L)						
				Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)
Statewide Health Standard, Residential, Used Aquifer				*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*
Shallow Zone										
MW-1	06/10/14	14.25	86.17	**373**	**1,550**	214	9.5	**1,210**	455	4,130
MW-2	06/10/14	15.59	85.47	**857**	195	68.9	2.0	67.2	208	544
MW-3	06/10/14	13.41	86.07	**13.0**	<1.0	2.4	2.2	<2.0	1.9	<3.0
MW-4	06/10/14	14.10	85.76	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0
MW-5	06/10/14	17.93	86.60	NS	NS	NS	NS	NS	NS	NS
MW-6	06/10/14	14.25	85.66	NS	NS	NS	NS	NS	NS	NS
MW-7	06/10/14	16.59	85.88	NS	NS	NS	NS	NS	NS	NS
MW-8	06/10/14	14.02	86.17	**2,370**	**1,570**	83.5	**211**	**573**	479	5,230
MW-9	06/10/14	14.15	86.14	**1,330**	**1,310**	85.1	**20.3**	**425**	55.1	1,320
MW-10	06/10/14	14.05	86.19	**87.5**	<1.0	6.6	4.4	<2.0	1.4	<3.0
MW-11	06/10/14	14.31	86.11	<1.0	5.5	49.6	<1.0	3.0	<1.0	4.6
MW-12	06/10/14	13.72	85.29	**21.8**	<1.0	4.8	3.2	<2.0	1.2	<3.0
Deep Zone										
MW-8D	06/10/14	13.81	86.22	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0
MW-10D	06/10/14	13.79	86.06	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0
MW-12D	06/10/14	13.58	85.34	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<3.0

Notes: 1) Concentrations exceeding their respective SHS-RUA values are shown in **bold**.
2) Groundwater samples were analyzed by EPA method 5030B/8260B.
3) NS = not sampled. Sampling was discontinued for monitoring wells MW-5, MW-6, and MW-7 following eight or more quarters of results below the SHS-RUA.

Table 13.0: Slug Test Results

Well ID	Screen Interval	Date	Hydraulic Conductivity (K) *(feet / day)*
MW-2	9 – 24 feet	09/04/2003	2
EW-1	9 – 29 feet	09/04/2003	10
MW-10	7 – 22 feet	10/28/2013	3
MW-12	7 – 22 feet	10/28/2013	0.7
AVERAGE:			**4**
MW-8D	25 – 35 feet	10/28/2013	3
MW-12D	25 – 35 feet	10/28/2013	30
AVERAGE:			**17**

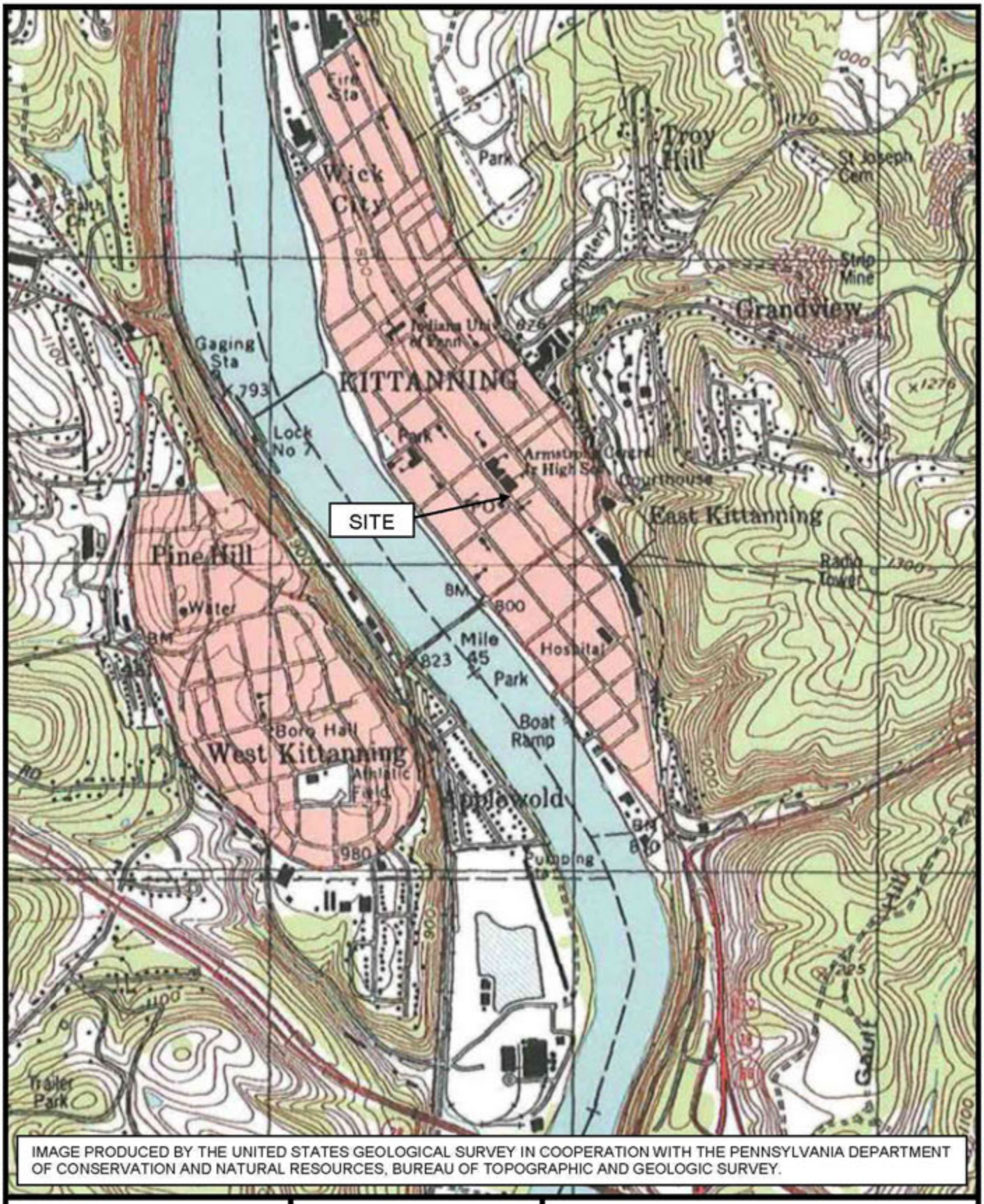

IMAGE PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY IN COOPERATION WITH THE PENNSYLVANIA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY.

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KITTANNING QUADRANGLE
PENNSYLVANIA
1998

7.5-MINUTE SERIES
CONTOUR INTERVAL 20 FEET

FIGURE 1
TOPOGRAPHIC MAP
HONEY-BEAR MINI MART
200 MCKEAN STREET, KITTANNING, PA 16201

FIGURE 2
SITE MAP
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS	JLS	SJG
DATE	DATE	DATE
12/13/2013	09/14/2014	09/29/2014

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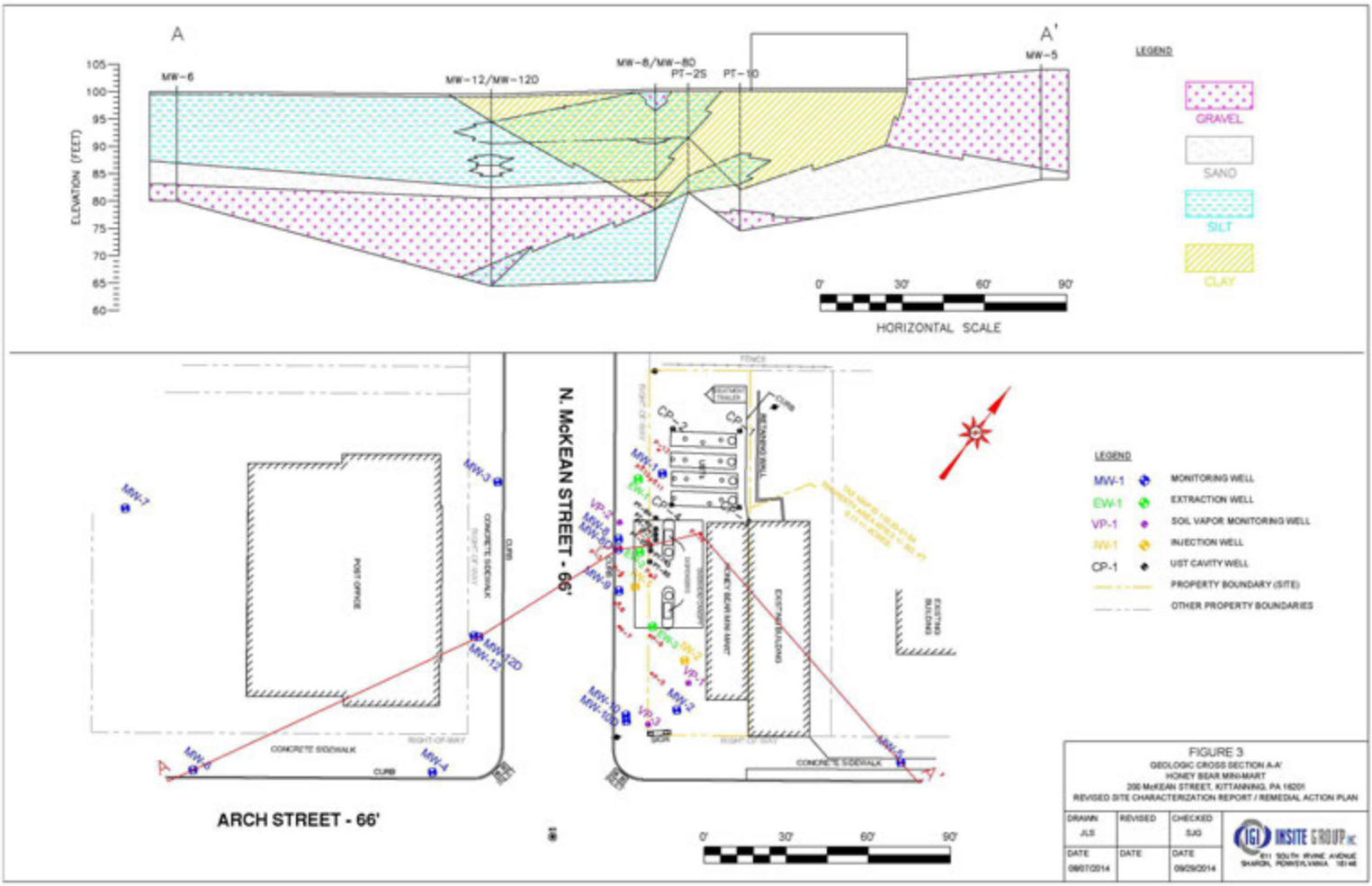

FIGURE 3
GEOLOGIC CROSS SECTION A-A'
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS		SJG
DATE	DATE	DATE
09/07/2014		09/29/2014

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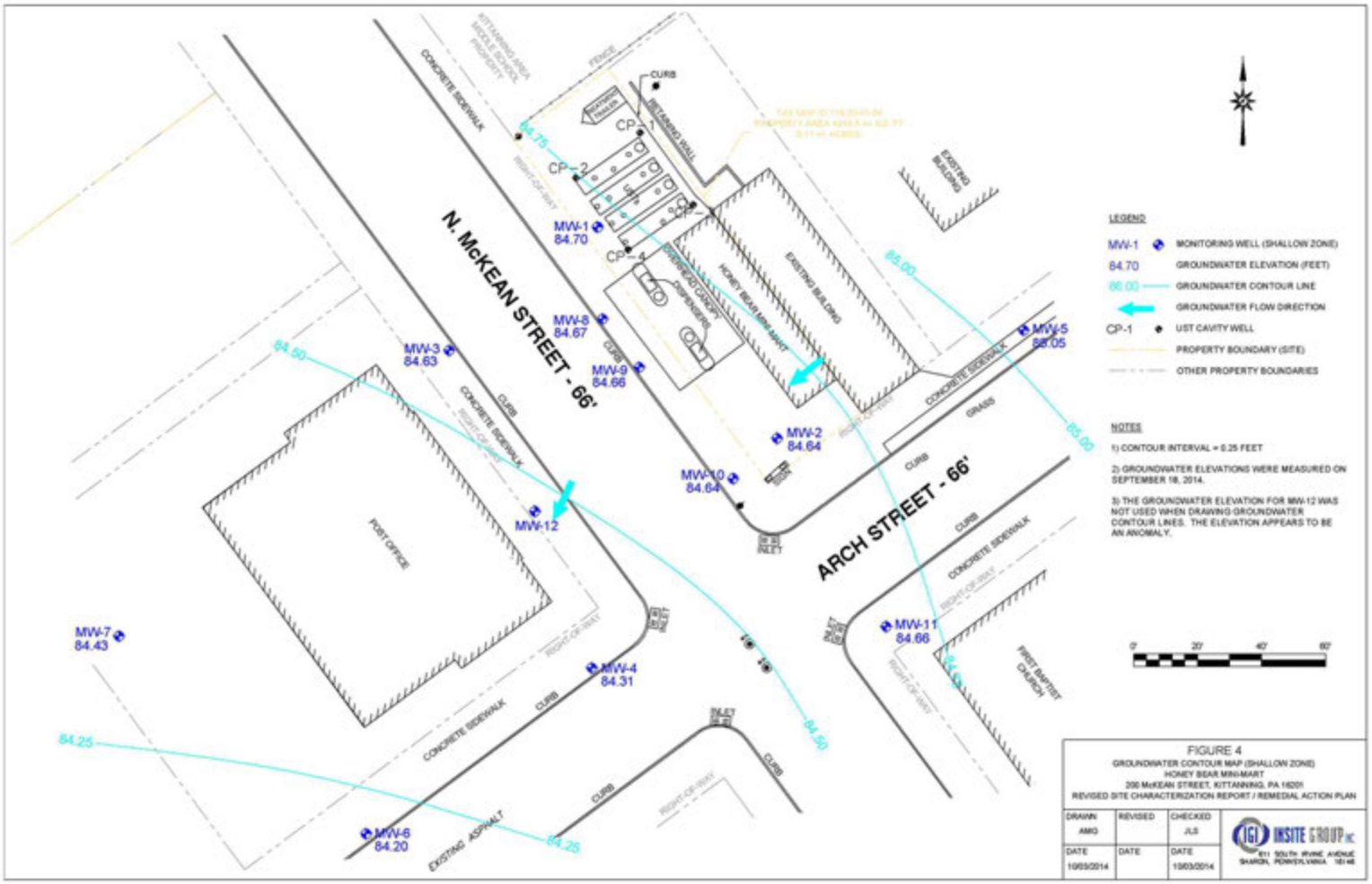

FIGURE 4
GROUNDWATER CONTOUR MAP (SHALLOW ZONE)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
AMG		JLS
DATE	DATE	DATE
10/03/2014		10/03/2014

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SHARON, PENNSYLVANIA 16146

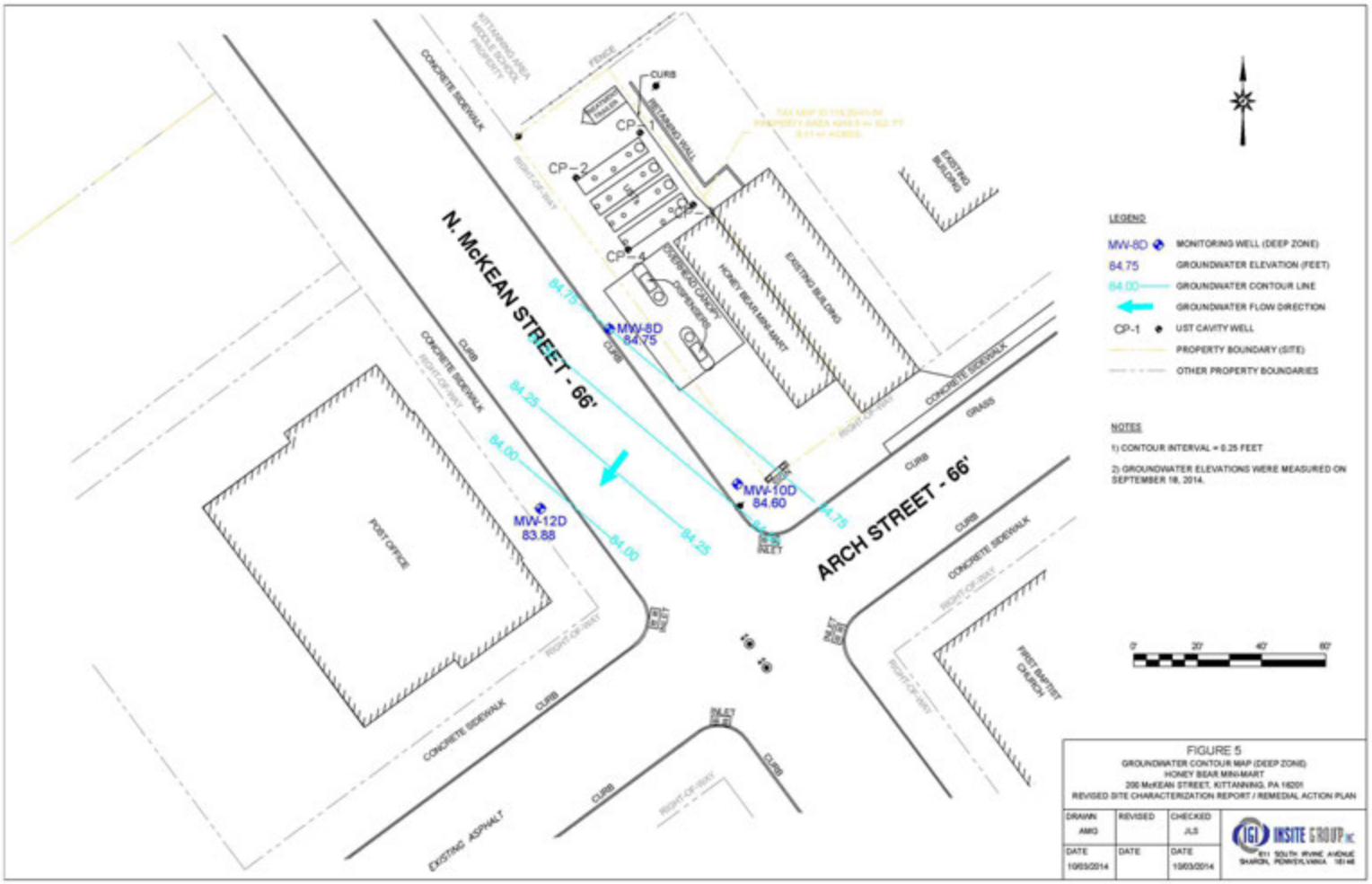

FIGURE 5
GROUNDWATER CONTOUR MAP (DEEP ZONE)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
AMG		JLS
DATE	DATE	DATE
10/03/2014		10/03/2014

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SHARON, PENNSYLVANIA 16146

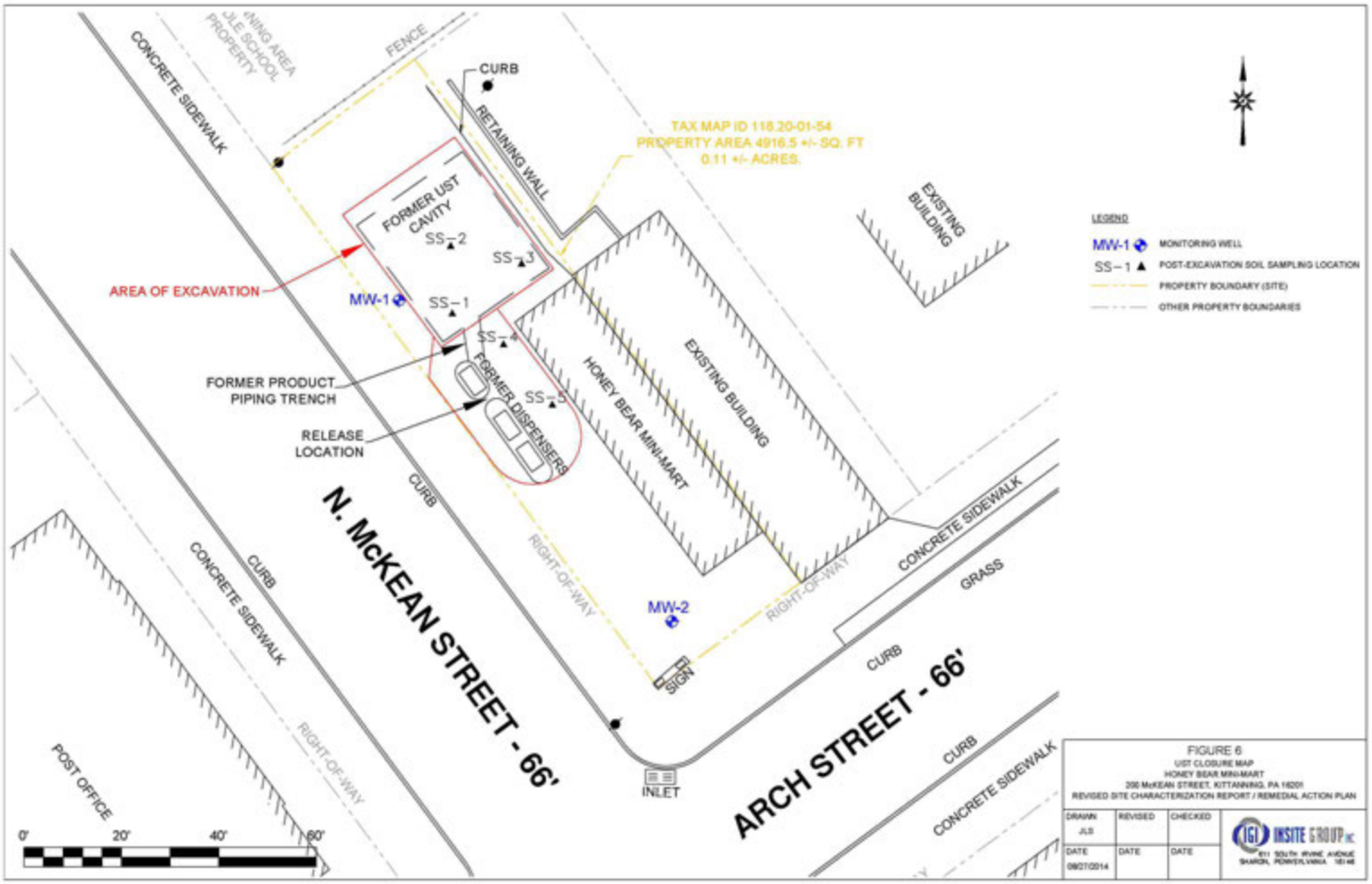

FIGURE 6
UST CLOSURE MAP
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS		
DATE	DATE	DATE
09/27/2014		

INSITE GROUP INC
911 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

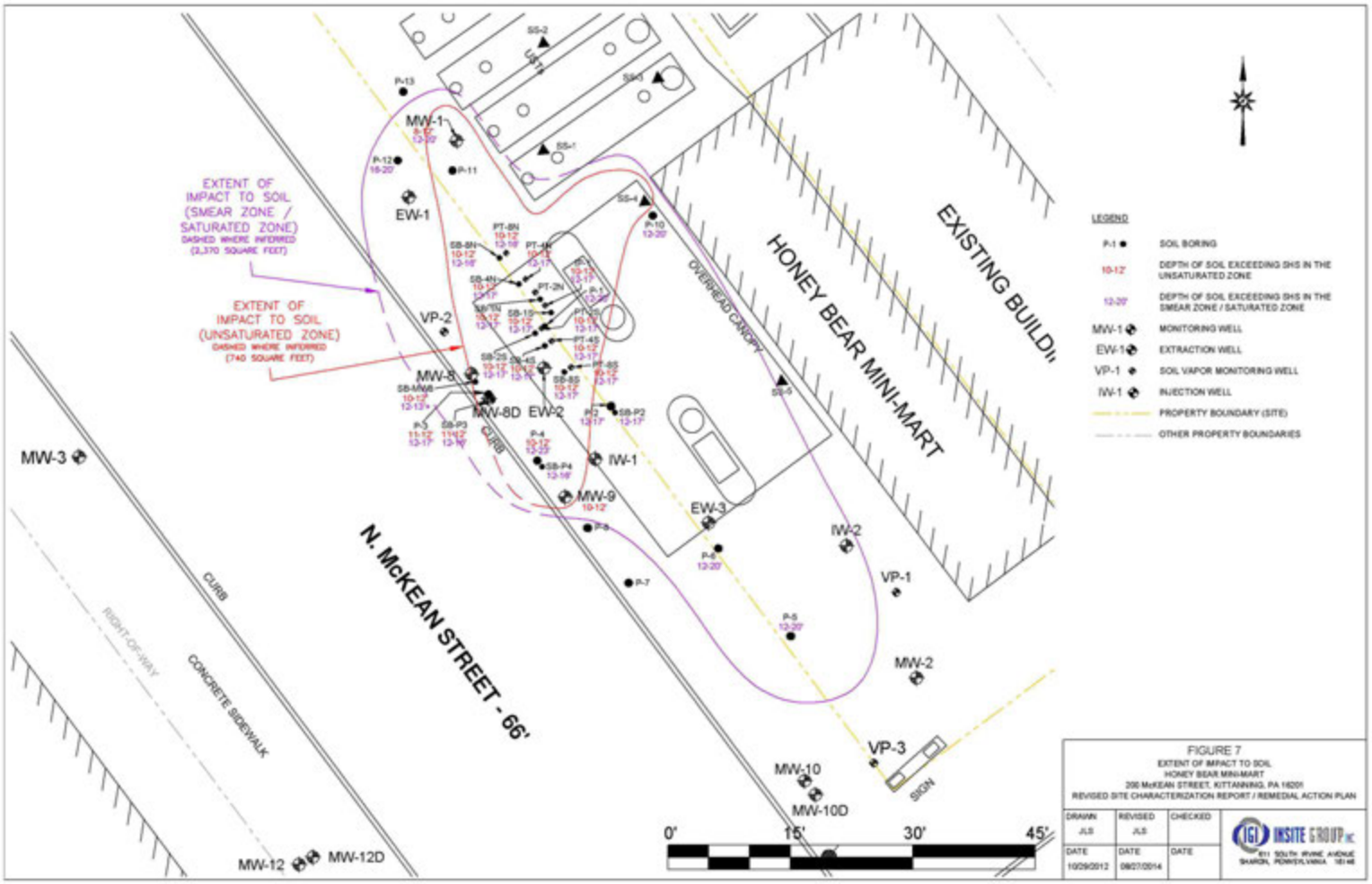

FIGURE 7
EXTENT OF IMPACT TO SOIL
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS	JLS	
DATE	DATE	DATE
10/29/2012	09/27/2014	

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SHARON, PENNSYLVANIA 16146

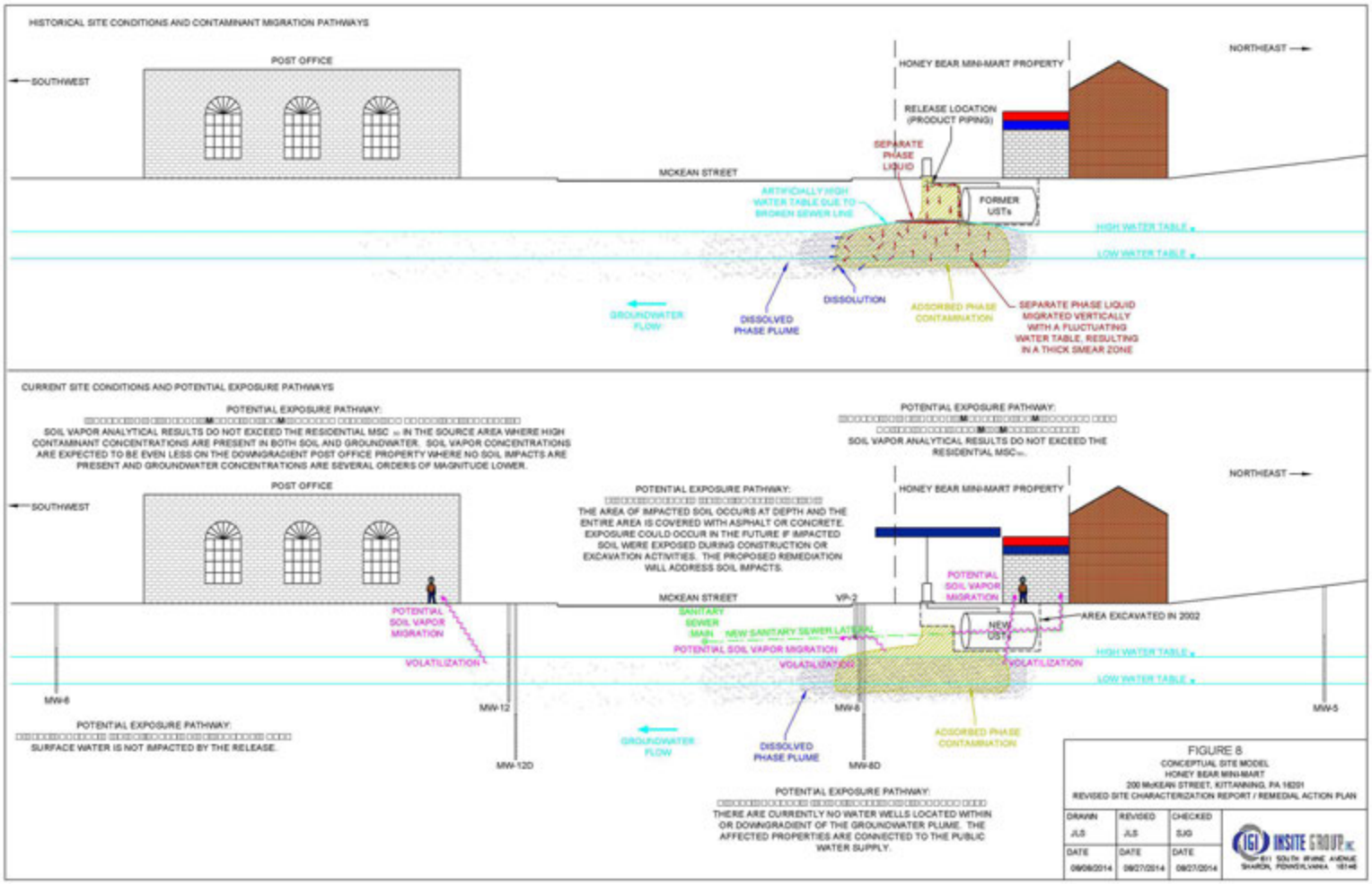

FIGURE 8
CONCEPTUAL SITE MODEL
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS	JLS	SJG
DATE	DATE	DATE
09/08/2014	09/27/2014	09/27/2014

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1391 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

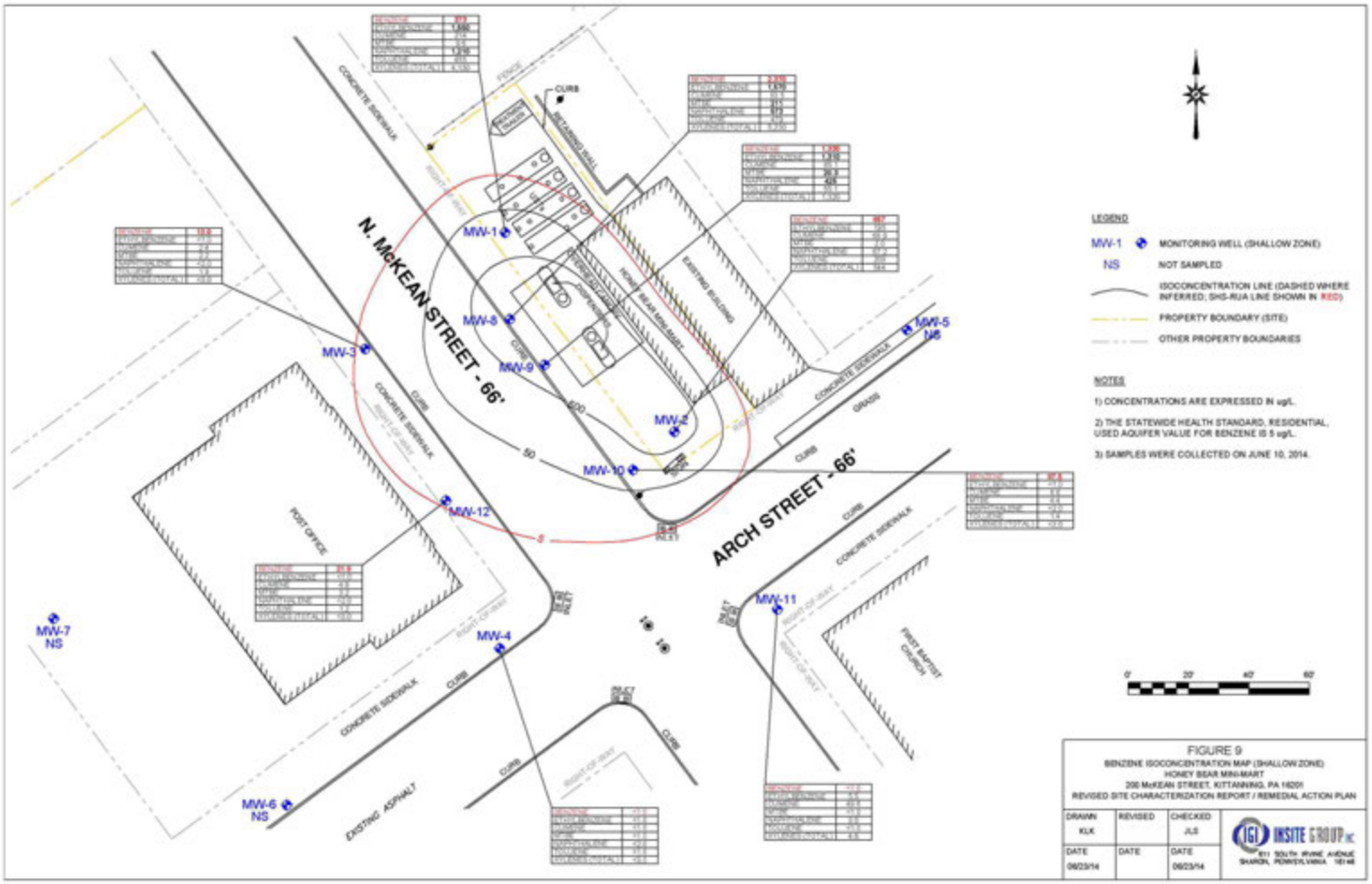

FIGURE 9

BENZENE ISOCONCENTRATION MAP (SHALLOW ZONE)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
KLK		JLS
DATE	DATE	DATE
06/23/14		06/23/14

INSITE GROUP INC
911 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

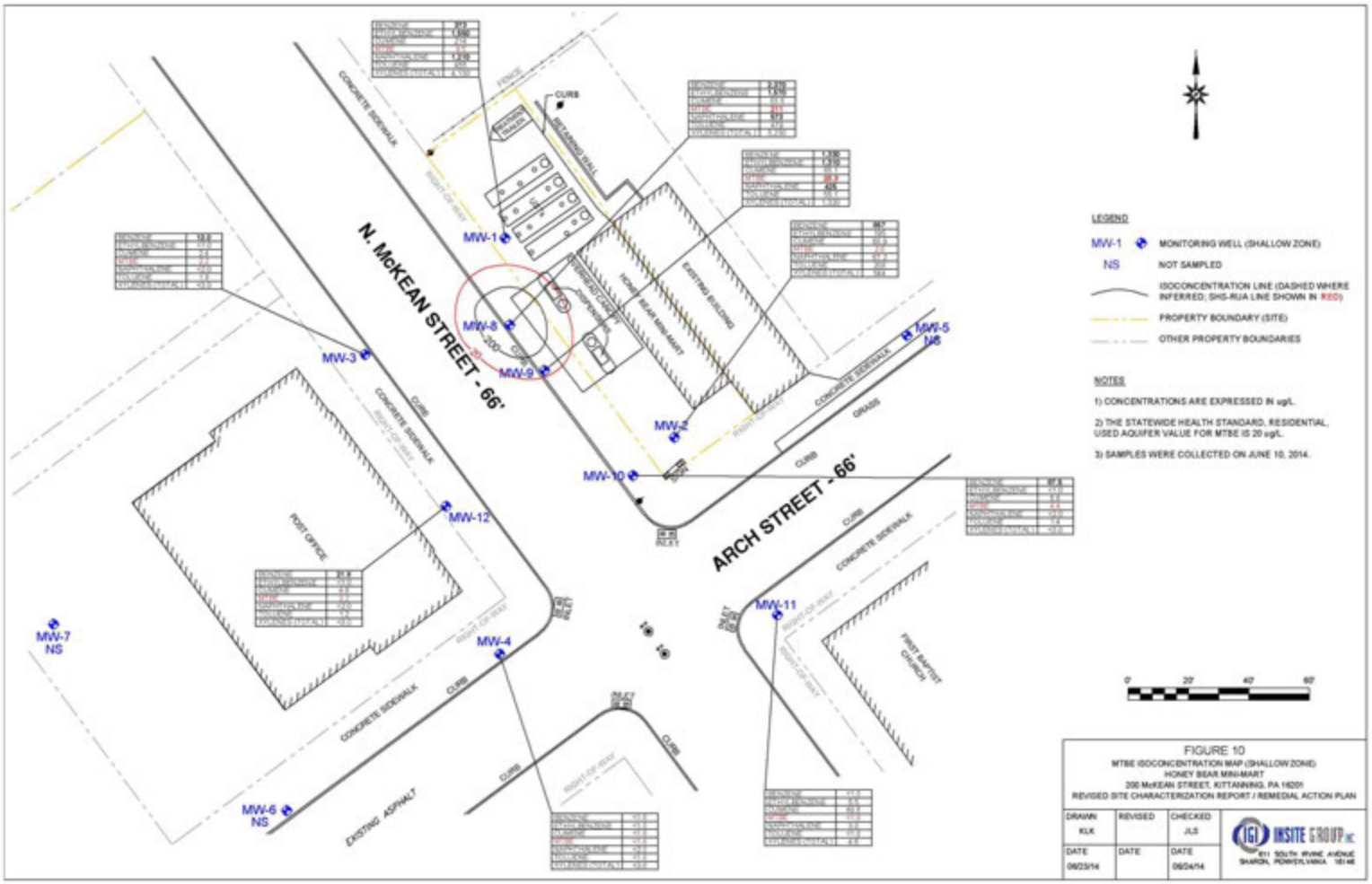

FIGURE 10

MTBE ISOCONCENTRATION MAP (SHALLOW ZONE)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
KLK		JLS
DATE	DATE	DATE
06/23/14		06/24/14

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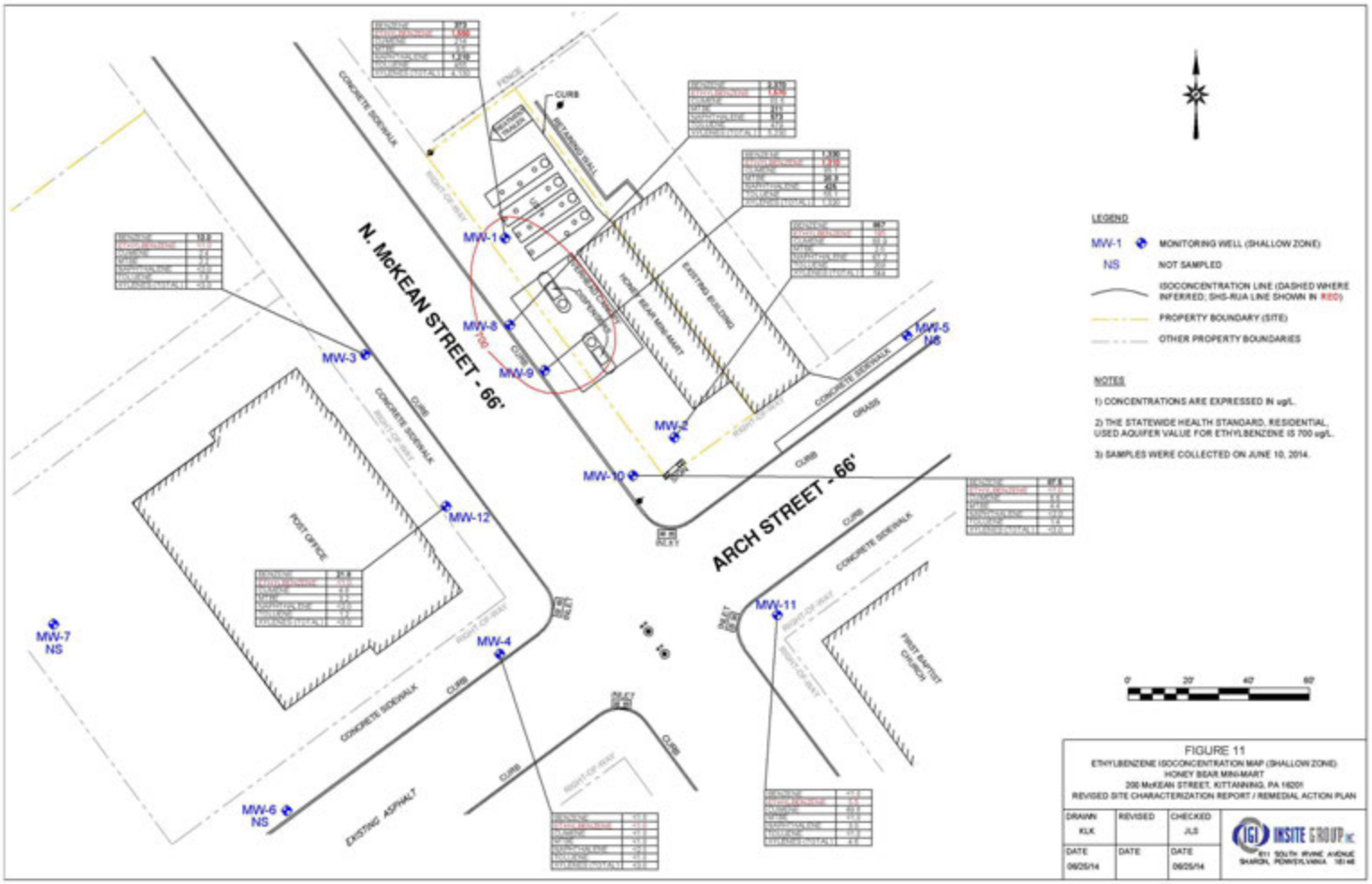

FIGURE 11

ETHYLBENZENE ISOCONCENTRATION MAP (SHALLOW ZONE)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
KLK		JLS
DATE	DATE	DATE
06/25/14		06/25/14

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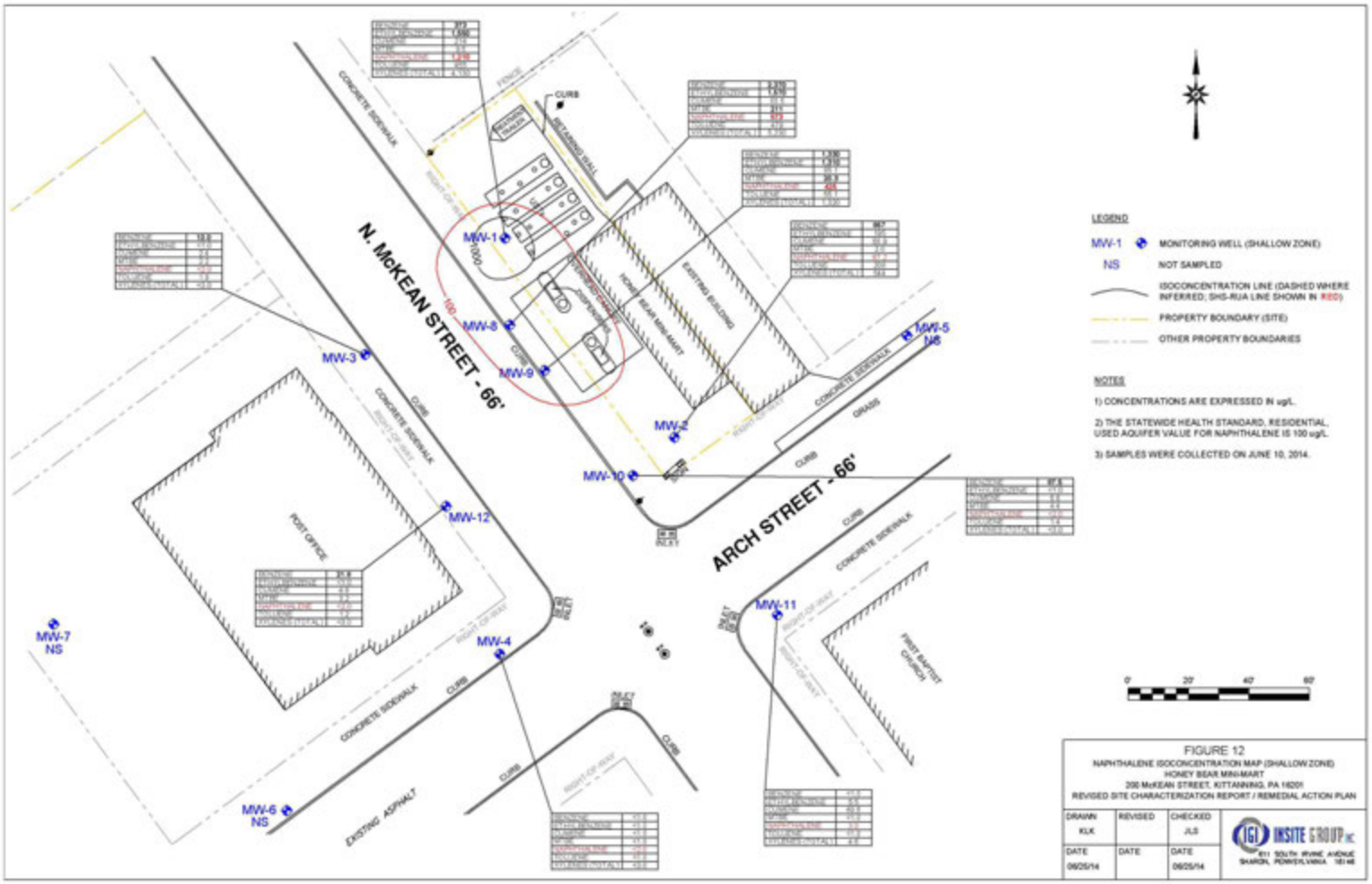

FIGURE 12

NAPHTHALENE ISOCONCENTRATION MAP (SHALLOW ZONE)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
KLK		JLS
DATE	DATE	DATE
06/25/14		06/25/14

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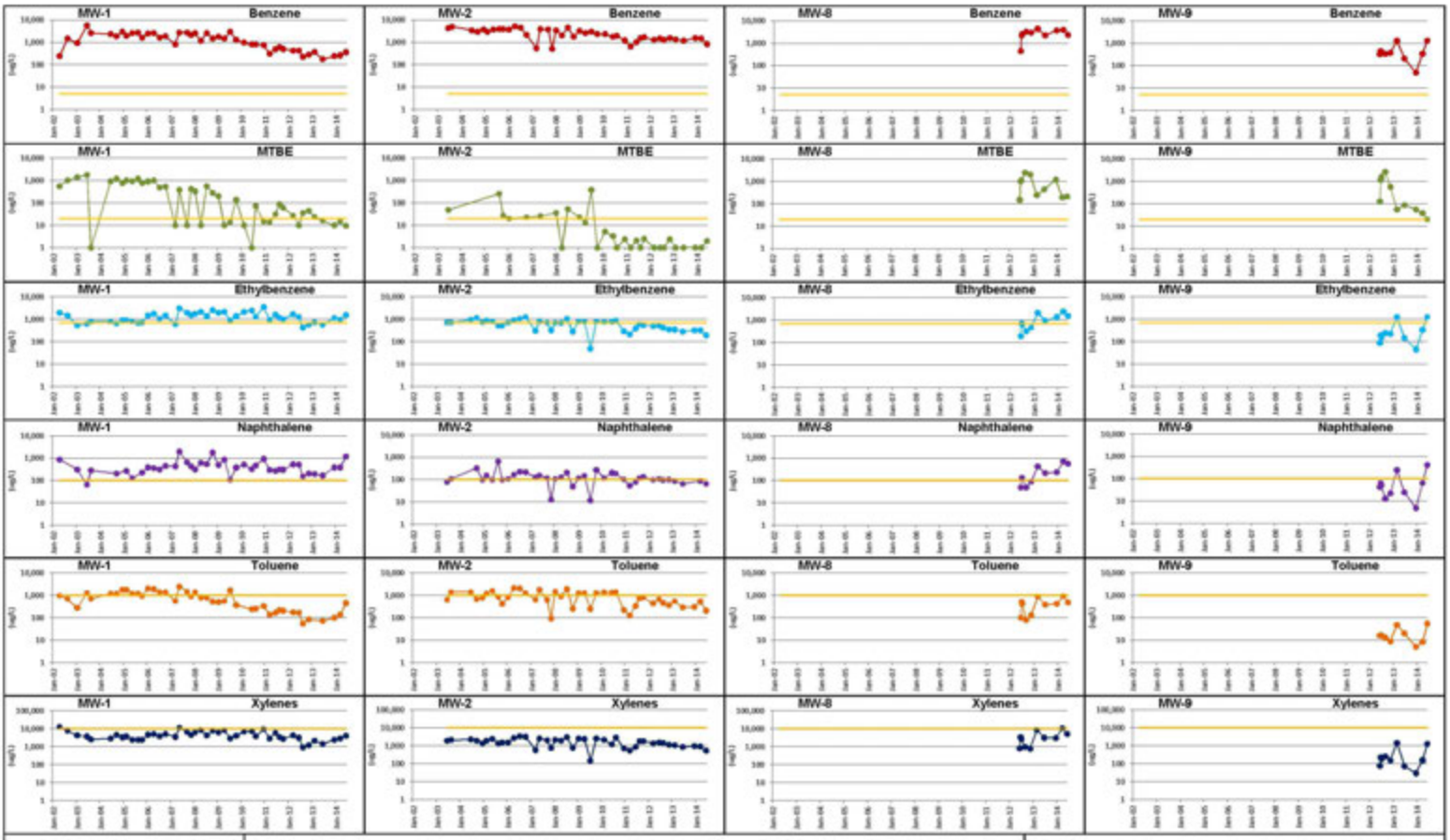
SHARON, PENNSYLVANIA 16146



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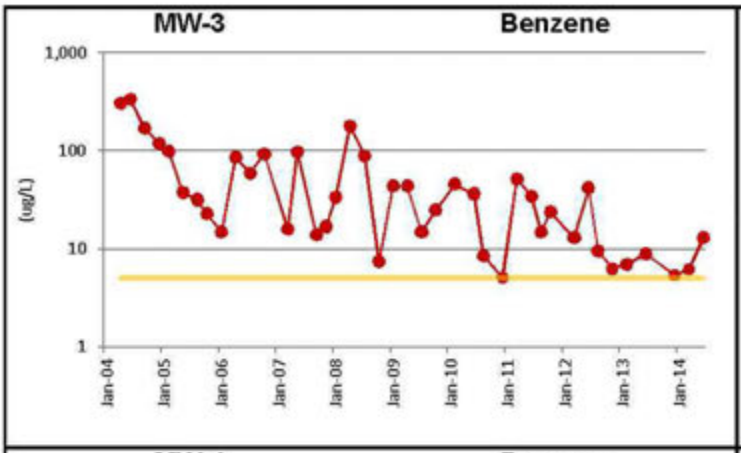
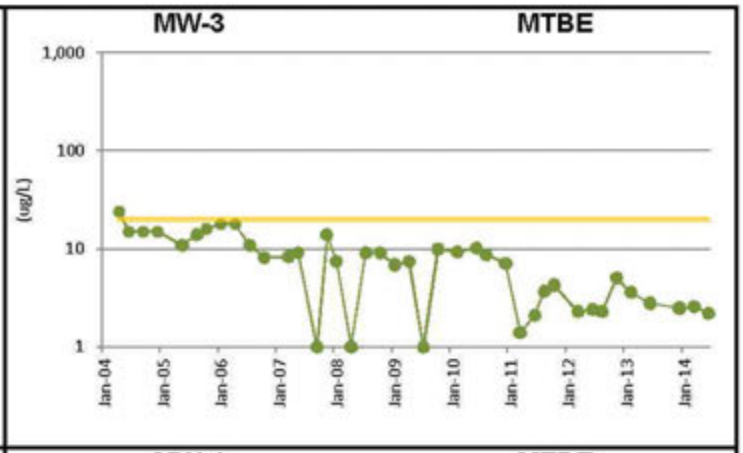
SHARON, PENNSYLVANIA 16154

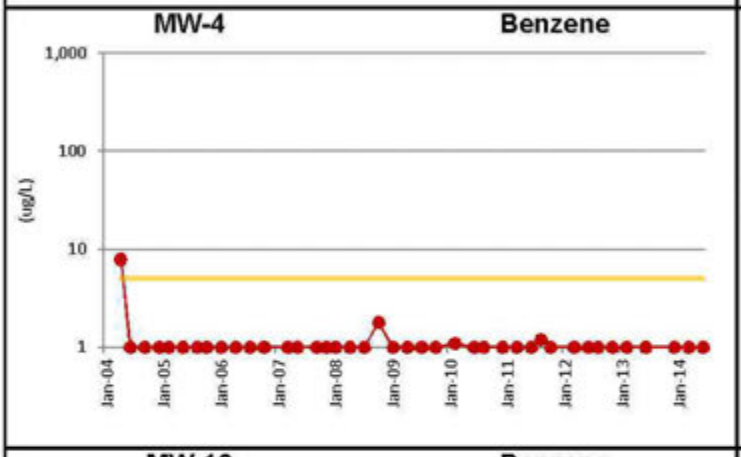
LEGEND:

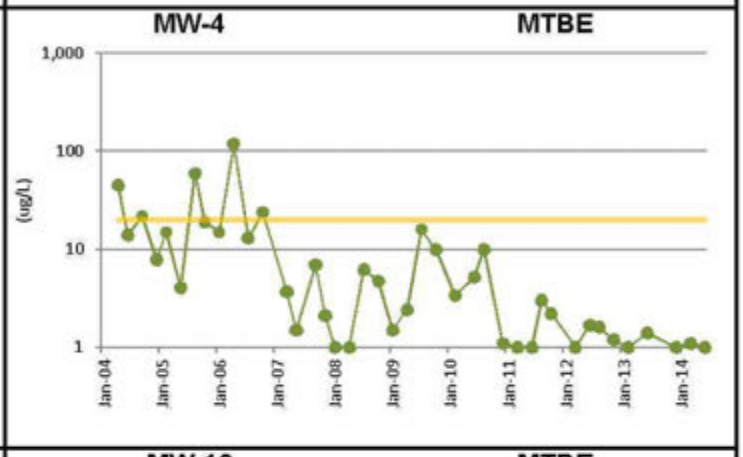
STATEWIDE HEALTH STANDARD, RESIDENTIAL, USED AQUIFER

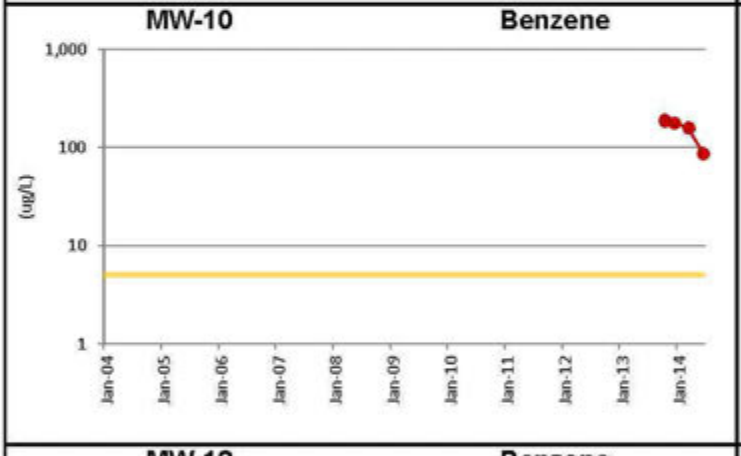
FIGURE 13
CONTAMINANT CONCENTRATION TREND GRAPHS (SOURCE AREA)
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

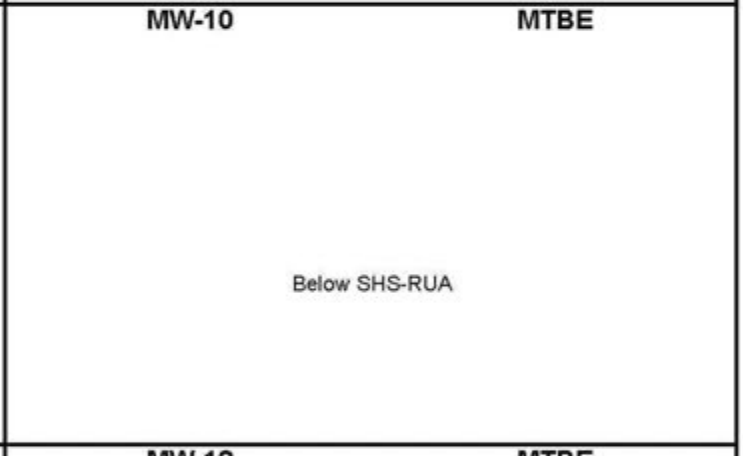


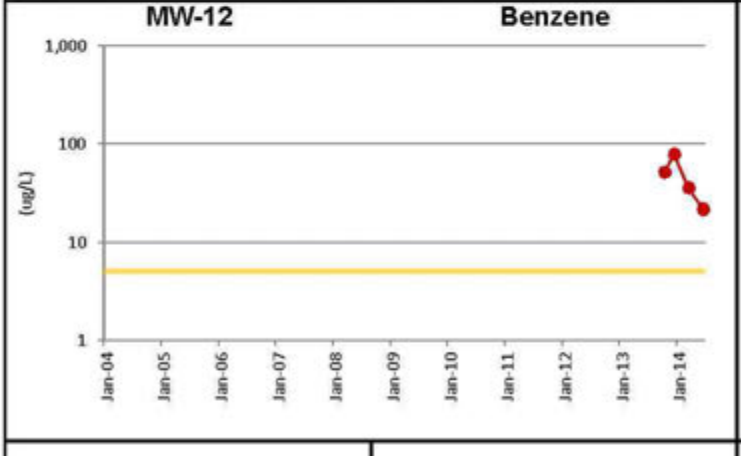


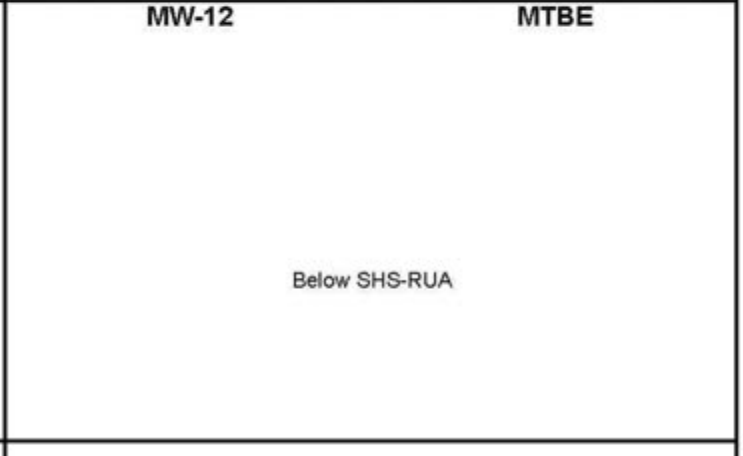












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SHARON, PENNSYLVANIA 16154

LEGEND:

STATEWIDE HEALTH STANDARD, RESIDENTIAL, USED AQUIFER

FIGURE 14

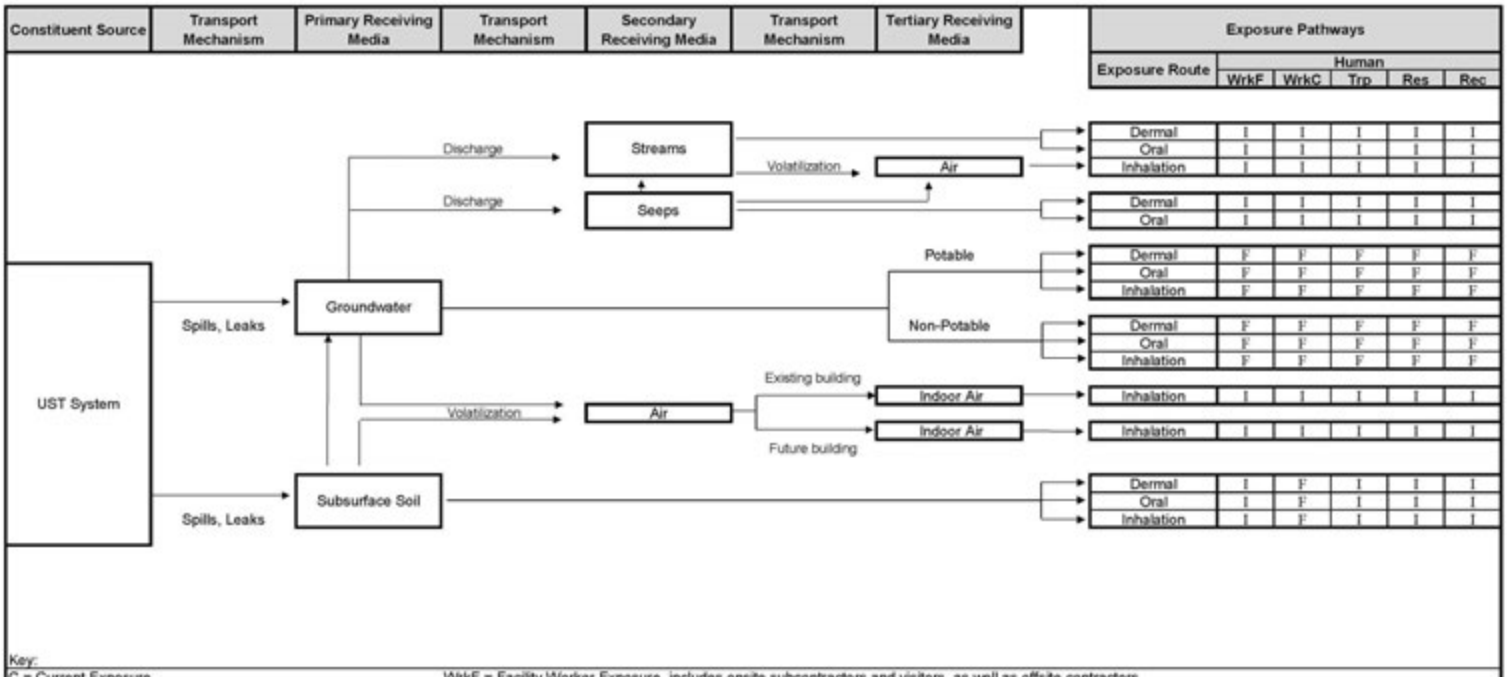
CONTAMINANT CONCENTRATION TREND GRAPHS

(DOWNGRADIENT WELLS)

HONEY BEAR MINI-MART

200 McKEAN STREET, KITTANNING, PA 16201

REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN



Key:

C = Current Exposure
F = Future Exposure
I = Incomplete
Rec = Recreational Exposure

WrkF = Facility Worker Exposure, includes onsite subcontractors and visitors, as well as offsite contractors
Trp = Trespasser Exposure
Res = Residential Exposure
WrkC = Construction Worker Exposure

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SHARON, PENNSYLVANIA 16146

FIGURE 15
EXPOSURE PATHWAY FLOWCHART
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

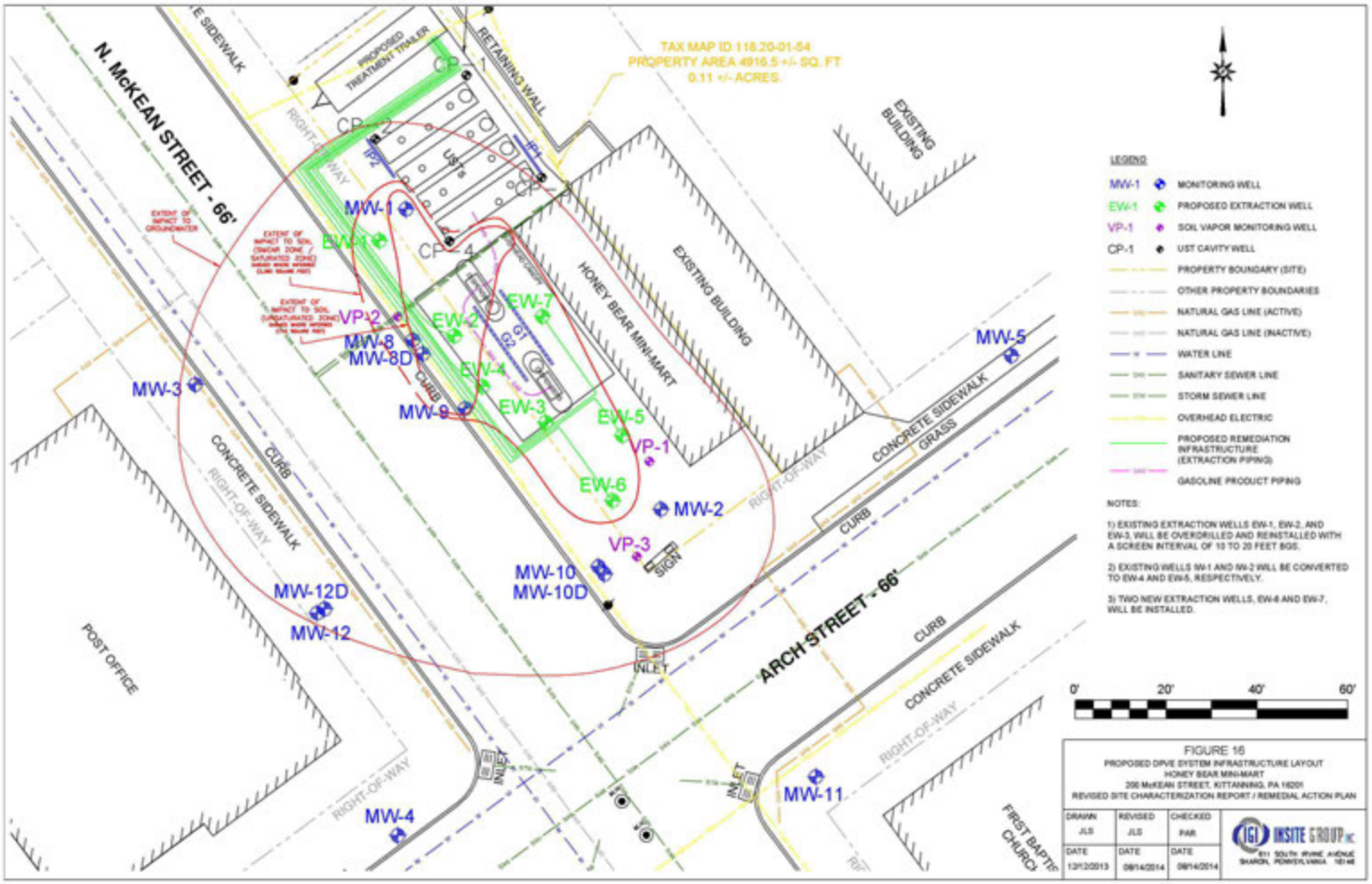

FIGURE 16
PROPOSED DPVE SYSTEM INFRASTRUCTURE LAYOUT
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS	JLS	PAR
DATE	DATE	DATE
12/12/2013	08/14/2014	08/14/2014

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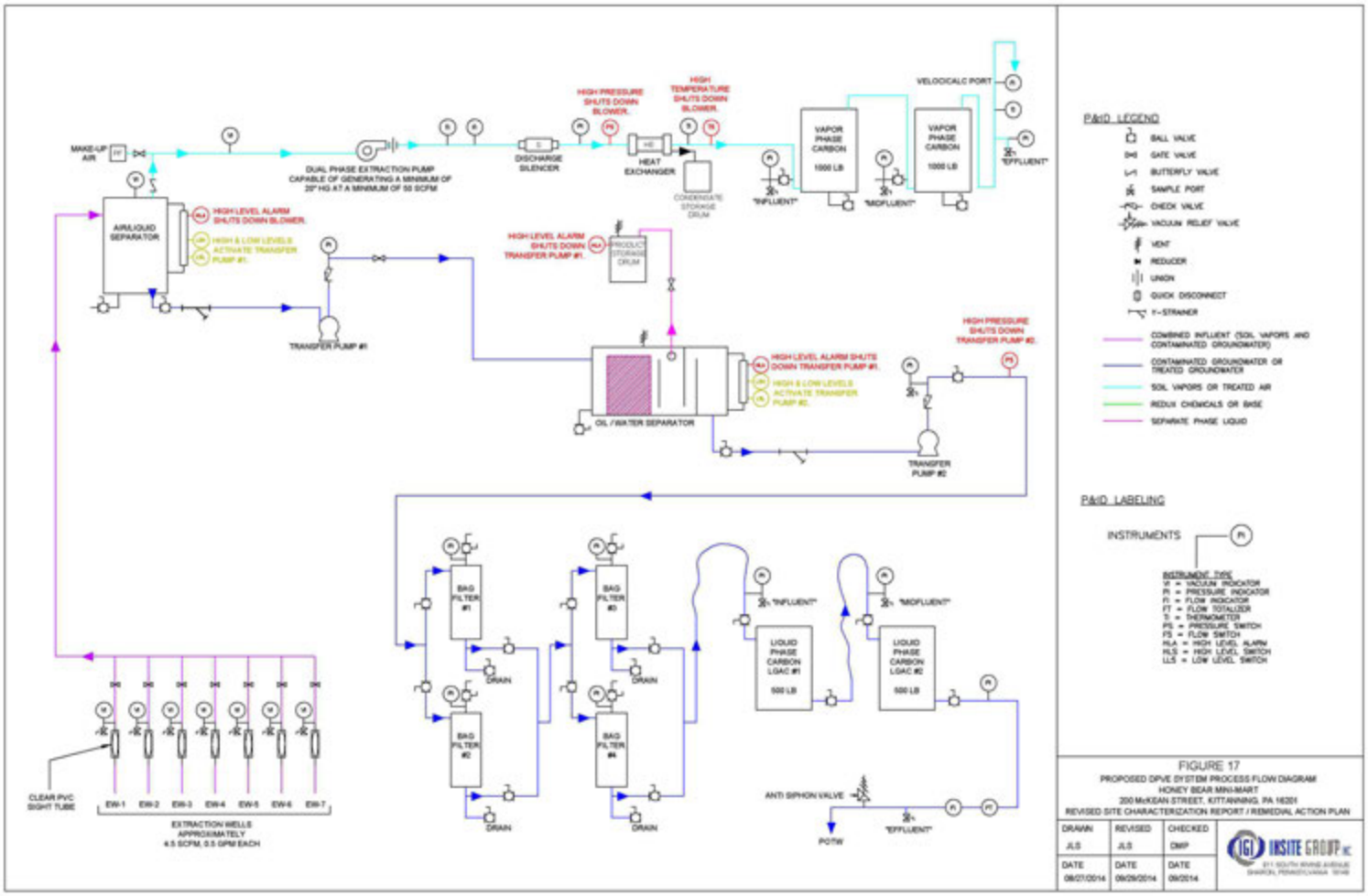
SHARON, PENNSYLVANIA 16146



P&ID LEGEND

- BALL VALVE
- GATE VALVE
- BUTTERFLY VALVE
- SAMPLE PORT
- CHECK VALVE
- VACUUM RELIEF VALVE
- VENT
- REDUCER
- UNION
- QUICK DISCONNECT
- Y-STRAINER
- COMBINED INFLUENT (SOIL VAPORS AND CONTAMINATED GROUNDWATER)
- CONTAMINATED GROUNDWATER OR TREATED GROUNDWATER
- SOIL VAPORS OR TREATED AIR
- REDUX CHEMICALS OR BASE
- SEPARATE PHASE LIQUID

P&ID LABELING

INSTRUMENTS — PI

INSTRUMENT TYPE
VI = VACUUM INDICATOR
PI = PRESSURE INDICATOR
FI = FLOW INDICATOR
FT = FLOW TOTALIZER
TI = THERMOMETER
PS = PRESSURE SWITCH
FS = FLOW SWITCH
HLA = HIGH LEVEL ALARM
HLS = HIGH LEVEL SWITCH
LLS = LOW LEVEL SWITCH

FIGURE 17
PROPOSED DPVE SYSTEM PROCESS FLOW DIAGRAM
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
REVISED SITE CHARACTERIZATION REPORT / REMEDIAL ACTION PLAN

DRAWN	REVISED	CHECKED
JLS	JLS	DMP
DATE 08/27/2014	DATE 09/29/2014	DATE 09/2014

INSITE GROUP, INC.
211 SOUTH MAIN AVENUE
SHARON, PENNSYLVANIA 16146

ATTACHMENT A

Project: **Arch Street**	Boring / Well ID: **MW-1**	Page 1 of 1
Location: Kittanning, PA	Depth of Boring: 16 ft.	Monitoring Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 04/19/02	Depth of Well: 15 ft.
Driller: Mike	Date Completed: 04/19/02	Diameter of Casing: 2.0 in.
Geologist: Paul Rogers	Initial Water Level: 6 ft.	Well Screen 0.020 Slot; Length: 10 ft.
		TOC Elev. 100.42 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel Flush mount cover & casing
1		Auger						Locking end cap
2								Bentonite Chips
3	S-1	4 4 4 4	0	--	Brown SILT,SANDSTONE ROCK FRAGMENTS, BRICK , medium dense moist, soft, (FILL)			Bentonite Seal
4								2" dia. Schedule 40, PVC Riser
5	S-2	7 5 6 6	1.0	6				
6								Water Initially encountered at 6 feet
7	S-3	1 2 1 3	0	--				
8								
9	S-4	1 3 3 5	1.0	170				Strong petroleum odor and sheen noted from 6 to 16 feet
10								
11	S-5	2 2 2 3	1.8	200	Interbedded dark brown SILT and clayey, fine grained SAND, moist, soft to medium stiff, (ALLUVIAL SOIL)			Washed Sand
12								
13	S-6	2 3 3 4	1.8	140				Black staining, 12 to 14 feet
14								
15	S-7	1 1 1 3	1.8	160				2" dia. 0.020 Slot, PVC Screen
16								
17					**Total Depth 16 feet**			
18								
19								
20								

Project: **Arch Street**	Boring / Well ID: **MW-1**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: ____ Geologist: Paul Rogers	Depth of Boring: 22 ft. Date Started: 06/09/03 Date Completed: 06/09/03	Monitoring Well Construction Depth of Well: 22 ft. Diameter of Casing: 2.0 in. Well Screen 0.020 Slot; Length: 15 ft. TOC Elev. 100.42 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0					MW-1 was overdrilled on June 9, 2003, after a new sanitary sewer connection was made to the Honey Bear Mini-Mart and water levels across the Site dropped. No soil sampling was conducted; for soil descriptions refer to the original MW-1 boring log.		Flush mount cover Locking end cap Bentonite Chips 2" dia. Schedule 40, PVC Riser Bentonite Seal Washed Sand 2" dia. 0.020 Slot, PVC Screen	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Total Depth 22 Feet

Project: **Arch Street**	Boring / Well ID: **MW-2**	Page 1 of 2
Location: Kittanning, PA	Depth of Boring: 25 ft.	Monitoring Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 06/26/02	Depth of Well: 24 ft.
Driller: Mike	Date Completed: 06/26/02	Diameter of Casing: 2.0 in.
Geologist: Paul Rogers	Initial Water Level: 18 ft.	Well Screen 0.020 Slot; Length: 15 ft.
		TOC Elev. 101.06 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flush mount cover
1		Auger						Locking end cap
2								
3	S-1	2 2 2 2	1.4	140	Light and dark brown SILT, some fine grained SAND, CINDERS, moist, soft, (FILL)			Bentonite Chips
4								
5	S-2	4 3 2 1	17	100				
6								2" dia. Schedule 40, PVC Riser
7	S-3	2 3 3 2	1.7	20	Interbedded dark brown SILT and SILTY CLAY, moist, medium stiff, (ALLUVIAL)			Bentonite Seal
8								
9	S-4	5 5 6 6	1.7	140				
10								
11	S-5	2 3 3 5	1.8	0				Washed Sand
12								
13	S-6	2 3 3 5	2	20	Brown fine grained SAND, some CLAYEY SAND, mottled black and gray, loose to medium dense, very moist to wet.(ALLUVIAL)			2" dia. 0.020 Slot, PVC Screen
14								
15	S-7	2 2 1 2	1.8	180				Petroleum odor and sheen noted from 14 to 24 feet
16								
17	S-8	2 10 3 4	1.8	100				
18								
19	S-9	10 7 7 10	1.8	100	Interbedded brown SAND AND GRAVEL			Water initially encountered at 19 feet
20								

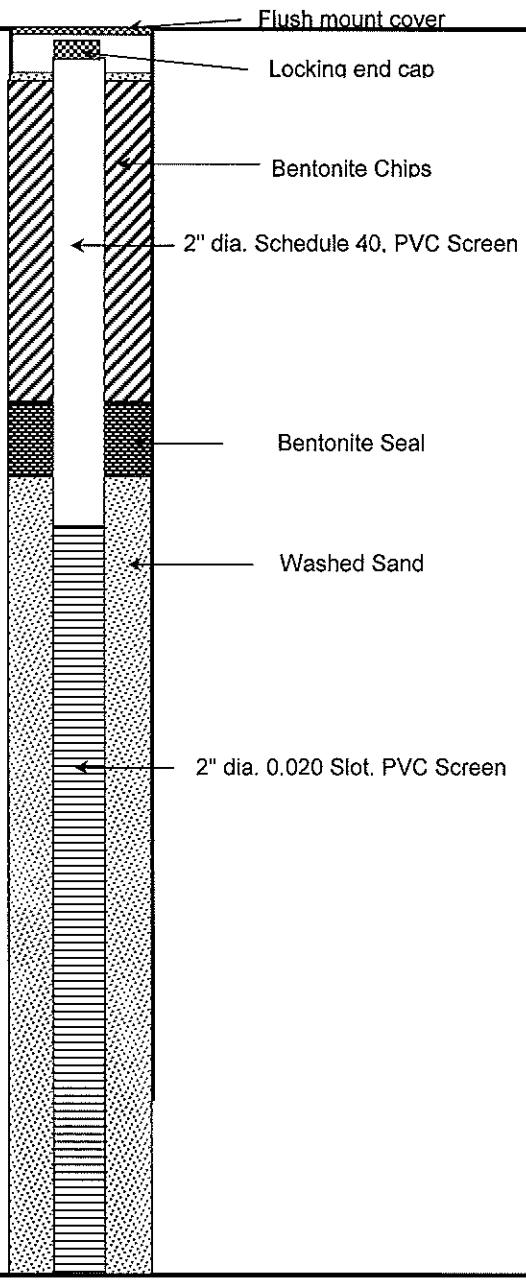
Project: **Arch Street**	Boring / Well ID: **MW-2**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Mike Geologist: Paul Rogers	Depth of Boring: 25 ft. Date Started: 06/26/02 Date Completed: 06/26/02 Initial Water Level: 18 ft.	Monitoring Well Construction Depth of Well: 24 ft. Diameter of Casing: 2.0 in. Well Screen 0.020 Slot; Length: 15 ft. TOC Elev. 101.06 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21	S-10	6 7 9 7	1.8	100	Interbedded brown SAND AND GRAVEL, wet, medium dense, (alluvial)			2" dia. Schedule 40, PVC Screen
22								
23	S-11	7 6 6 7	1.8	100				
24	Auger							
25					Total Depth 24 feet			
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring / Well ID: **MW-2**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: ____ Geologist: Paul Rogers	Depth of Boring: 25 ft. Date Started: 06/09/03 Date Completed: 06/09/03	Monitoring Well Construction Depth of Well: 25 ft. Diameter of Casing: 2.0 in. Well Screen 0.020 Slot; Length: 15 ft. TOC Elev. 101.06 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details

MW-2 was overdrilled on June 9, 2003, after the well became filled with gravel during backfilling activites following the excavation of impacted soils. No soil sampling was conducted; for soil descriptions refer to the original MW-2 boring log.

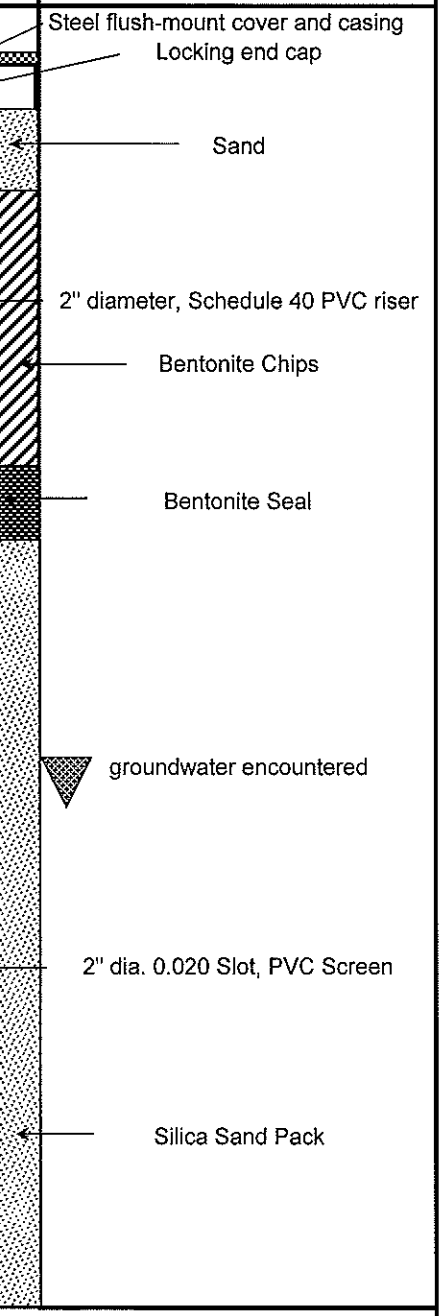


0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Total Depth 25 Feet

Project: **Arch Street**	Boring/Well ID: **MW-3**	Page 1 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Geologist: Paul Rogers	Depth of Boring: 22.5 ft. Date Started: 04/14/04 Date Completed: 04/14/04	Monitoring Well Construction Depth of Well: 22 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 10 ft. TOC Elev.: 99.48 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology
0					Concrete	
1						
2		Auger			SANDY SILT, brown, moist.	
3						
4						
5	S-1	1-2-3-3	1.7	--	SANDY SILT, light brown with fine sand lenses, moist to wet, soft, (alluvial)	
6						
7	S-2	2-4-4-4	1.6	--	SILTY CLAY, yellow, moist, medium stiff plastic, (alluvial)	
8						
9	S-3	1-3-3-4	1.8	--	SANDY SILT, light brown with fine sand lenses, moist to wet, soft to medium stiff, (alluvial)	
10						
11	S-4	2-2-2-3	2.0	6		
12						
13	S-5	1-1-3-3	1.3	6	Interbedded SAND AND SILT, fine grained,trace rounded gravel, gray, moist to wet,very loose to loose, (alluvial). Staining and degraded gasoline odor noted at 10 to 11.4 feet.	
14						
15	S-6	1-2-1-1	2.0	38		
16						
17	S-7	WOH-WOH-1-WOH	2.0	--		
18						
19	S-8	WOH-1-3-8	2.0	--	SANDY GRAVEL, brown, very loose, trace silt, wet, (alluvial)	
20						



Project: **Arch Street**	Boring/Well ID: **MW-3**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Inspector: Paul Rogers	Depth of Boring: 22.5 ft. Date Started: 04/14/04 Date Completed: 04/14/04	Monitoring Well Construction Depth of Well: 22 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 10 ft. TOC Elev.: 99.48 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21	S-9	WOH-5-15-14	1.5	--	SANDY GRAVEL,brown, very loose to medium dense, trace silt, wet, (alluvial)			2" dia. 0.020 Slot, PVC Screen
22	Auger							Silica Sand Pack
23								
24					Total depth 22.5 feet			
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring/Well ID: **MW-4**	Page 1 of 2
Location: Kittanning, PA	Depth of Boring: 22.5 ft.	Monitoring Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 04/14/04	Depth of Well: 22 ft.
Driller: Brian Hobbes	Date Completed: 04/14/04	Diameter of Casing: 2.0 in.
Geologist: Paul Rogers		Well Screen: 0.020 Slot; Length: 12 ft.
		TOC Elev.: 99.86 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel flush-mount cover and casing
								Locking end cap
					Concrete			
1								Sand
2					Auger			
					SANDY SILT, brown, moist.			
3								
4								2" diameter, Schedule 40 PVC riser
	S-1	1-2-3-3	2.0	--	SILTY CLAY, green-brown. moist, medium stiff plastic, (alluvial)			
5								Bentonite Chips
6								
7	S-2	2-3-3-4	1.6	--				Bentonite Seal
8								
9	S-3	1-2-3-4	1.7	--				
10								
11	S-4	1-1-2-2	1.5	--	SAND,fine grained, trace silt,gray,yellow, brown, moist to wet, very loose to loose, (alluvial)			groundwater encountered
12								
13	S-5	1-1-1-1	1.6	--				
14								
15	S-6	1-2-4-4	1.1	--				2" dia. 0.020 Slot, PVC Screen
16								
17	S-7	3-2-1-1	1.5	--	SAND AND GRAVEL, brown, gray, yellow, green, wet, very loose to medium dense, gravel is rounded, sub-angular, trace coal, (alluvial).			Silica Sand Pack
18								
19	S-8	1-4-7-8	1.5	--				
20								

Project: **Arch Street**	Boring/Well ID: **MW-4**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Inspector: Paul Rogers	Depth of Boring: 22.5 ft. Date Started: 04/14/04 Date Completed: 04/14/04	Monitoring Well Construction Depth of Well: 22 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 12 ft. TOC Elev.: 99.86 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21	S-9	5-29-14-16	1.3	--	SAND AND GRAVEL, yellow-brown, wet, dense, gravel is rounded, and includes broken cobbles (alluvial).			2" dia. 0.020 Slot, PVC Screen
22								Silica Sand Pack
23					Total depth, 22 feet			
24								
25								Note: No petroleum odors were noted during soil sampling.
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring/Well ID: **MW-5**	Page 1 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Geologist: Paul Rogers	Depth of Boring: 26.5 ft. Date Started: 04/15/04 Date Completed: 04/15/04	Monitoring Well Construction Depth of Well: 26 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 15 ft. TOC Elev.: 104.53 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel flush-mount cover and casing
								Locking end cap
					Concrete			
1								Sand
2					Auger			
3								
4								2" diameter, Schedule 40 PVC riser
5	S-1	7 13 11 9	1.4	--				Bentonite Chips
6								
7	S-2	5 8 9 9	1.2	--				
8					SAND AND GRAVEL,brown, moist to wet, medium dense, sand is fine to coarse grained, gravel is rounded and contains fragments of cobbles. (aluvial)			groundwater encountered
9	S-3	7 9 9 10	1.3	--				Bentonite Seal
10								
11	S-4	4 7 8 8	1.2	--				
12								
13	S-5	6 7 6 16	1.4	--				
14								
15	S-6	9 9 13 12	1.5	--				2" dia. 0.020 Slot, PVC Screen
16								
17	S-7	4 9 14 13	1.3	--				Groundwater measured
18								Silica Sand Pack
19	S-8	4 8 10 13	1.5	--	SAND, brown, medium to coarse grained, wet,medium dense, (alluvial)			
20								

Project: **Arch Street**	Boring/Well ID: **MW-5**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Inspector: Paul Rogers	Depth of Boring: 26.5 ft. Date Started: 04/15/04 Date Completed: 04/15/04	Monitoring Well Construction Depth of Well: 26 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 15 ft. TOC Elev.: 104.53 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21	S-9	8 11 5 4	1.5	--	SAND, brown, medium to coarse grained, trace rounded gravel, wet,medium dense, (alluvial)		2" dia. 0.020 Slot, PVC Screen Silica Sand Pack	
22								
23	S-10	2 4 5 6	1.0	--				
24								
25	S-11	2 4 6 6	1.8	--				Note: No petroleum odors were noted during soil sampling.
26	Auger							
27								
28								
29					Total depth, 26.5 feet			
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring/Well ID: **MW-6**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: John / Paul Geologist Paul Rogers	Depth of Boring: 20 ft. Date Started: 05/17/04 Date Completed: 05/17/04	**Monitoring Well Construction** Depth of Well: 20 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 10 ft. TOC Elev.: 99.91 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0							Steel flush-mount cover	
1					Concrete		Locking end cap Sand	
2								
3	Auger							
4							2" diameter, Schedule 40 PVC riser	
5							Bentonite Chips	
6								
7	S-1	1 2 3 4	1.7	--	Interbedded layers of brown SANDY SILT and find SAND, loose to medium dense. (alluvial)		Bentonite Seal	
8								
9	Auger							
10								
11	S-2	1 2 2 2	1.7	--			groundwater encountered	
12								
13	Auger							
14								
15	S-3	1 1 2 3	1.3	--	Fine to medium, brown SAND, loose, wet. (alluvial)		2" dia. 0.020 Slot, PVC Screen	
16								
17	Auger						Silica Sand Pack	
18								
19	S-4	2 8 17 27	--	--	Brown Coarse SAND & GRAVEL, subrounded, wet, dense.(alluvial)			
20								

Total Depth 20 feet

Project: **Arch Street**	Boring/Well ID: **MW-7**	Page 1 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: John / Paul Geologist: Paul Rogers	Depth of Boring: 24 ft. Date Started: 05/17/04 Date Completed: 05/17/04	Monitoring Well Construction Depth of Well: 24 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 10 ft. TOC Elev.: 102.47 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel flush-mount cover
								Locking end cap
1					Concrete			sand
2								
3								
4					Auger			2" diameter, Schedule 40 PVC riser
5								Bentonite Chips
6								
7								
8								
9	S-1	1 3 4 4	1.8	--	Brown SANDY SILT			Bentonite Seal
10								
11					Auger			
12								
13	S-2	2 2 2 3	1.8	--				
14								
15	S-3	1 1 2 3	1.8	--	Brown fine SAND, with interbedded layers of brown SILTY CLAY and CLAYEY SAND (alluvial)			groundwater encountered
16								2' dia. 0.020 slot, PVC Screen
17					Auger			Silica Sand Pack
18								
19	S-4	1 3 5 9	1.8	--	Brown, coarse SAND & GRAVEL			
20								

Project: **Arch Street**	Boring/Well ID: **MW-7**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: John / Paul Inspector: Paul Rogers	Depth of Boring: 24 ft. Date Started: 05/17/04 Date Completed: 05/17/04	Monitoring Well Construction Depth of Well: 24 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 10 ft. TOC Elev.: 102.47 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21	Auger				Brown, dense, coarse SAND & GRAVEL (alluvial)		2" dia. 0.020 Slot, PVC Screen	
22							Silica Sand Pack	
23	S-5	2 12 19 21	--	--				
24								
25					Total Depth 24 feet			
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring/Well ID: **MW-8**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 22 feet Date Started: 06/06/2012 Date Completed: 06/06/2012	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	HAMMER DRILL				CONCRETE			Expandable End Cap
1								
2								
3	Push to 5 feet, then begin sampling.							2" dia. PVC Riser
4								
5								
6								Portland Cement
7	Push-1	5	1435	3	Brown SILTY CLAY, medium stiff, damp. Becomes SANDY from 8.8 to 9 feet. No petroleum odor or staining.			
8								
9				21	Layers of brown CLAYEY SAND, gray SILTY SAND, and brown SILTY CLAY, wet. Some staining, no odor.			Bentonite
10					SAND & GRAVEL 10.0 to 10.2 feet.			
11								
12	Push-2	3.3	1440	1330 LAB	Gray CLAYEY SILTY SAND, wet, Petroleum staining, strong gasoline odor.			
13								
14				X				
15								Washed Sand
16				915				2" dia., 0.010" Slot PVC Screen
17	Push-3	5	1445		Brown SANDY CLAY, faint gasoline odor.			
18				63	Gray CLAYEY SAND, wet, flowing sand, faint gasoline odor.			
19					Brown CLAY, medium stiff, no odor.			
20								
21	AUGER				CLAYEY SAND & fine GRAVEL.			
22								
	Total Depth 22 feet							

Project: **Arch Street**	Boring/Well ID: **MW-8D**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Cribbs & Associates Driller: Calvin Logged By: MLK	Depth of Boring 35 feet Date Started: 10/07/13 Date Completed: 10/09/13	Well Construction Depth of Well 34.8 feet Diameter of Casing 2" Well Screen Slot: 0.020" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0	CORE DRILL				CONCRETE (0.5 ft)			Flushmount Cover
2	HAND AUGER				Gravel, silt, brick (fill) to 4.5 ft.			Expandable End Cap Washed Sand
4								
6	G-1	GEOPROBE		0	Light brown mottled CLAY, stiff, moist, no odor, no staining.			2" dia. PVC Riser
8				1				
10	G-2			1	Light brown clayey SILT, moist, no odor, no staining, trace fine SAND, very moist, black staining, gasoline odor at 12'.			Bentonite chips
12				15				
14	HOLLOW STEM AUGER				Brown, clayey SILT (ML), moist, strong odor (Alluvial)			
16								
18								
20								Driller reports softer material, poor return of cuttings.
22					Sand? (no cuttings).			Bentonite pellets
24								
26					Sandy SILT (ML), moist, very fine grained, strong odor (Alluvial).			
28								
30					Light brown silty SAND (SW), moist to wet, very fine grained (Alluvial).			Washed Sand
32								2" dia., 0.020" Slot PVC Screen
34								
36					Total Depth 35 feet			
38								
40								
42								
44								

Project: **Arch Street**	Boring/Well ID: **MW-9**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 22 feet Date Started: 06/07/2012 Date Completed: 06/07/2012	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	HAMMER DRILL				CONCRETE			Expandable End Cap
1	Push-1	2.5	10:04		FILL (clay, silt, wood debris, coal)			
2								
3				3.2	Layers of gray CLAY and SILTY SAND, petroleum staining and odors.			2" dia. PVC Riser
4								
5								
6	Push-2	3.9	10:12	1.3	Light brown CLAY, stiff, moist. Medium stiff zones with petroleum staining and faint odor from 6.0 to 6.5 feet and 8.0 to 8.5 feet.			Portland Cement
7								
8				7.1				
9					SANDY CLAY, petrolum staining and moderate odors.			Bentonite
10								
11	Push-3	2.6	10:17	1601 LAB	Layers of gray SAND and SANDY CLAY, moist to wet. Petroleum staining and odor strongest in sand layers.			
12								
13								
14								
15								Washed Sand
16	Push-4	4	10:22	354	Gray CLAYEY SILTY SAND, wet, flowing, petroleum staining and strong odor.			2" dia., 0.010" Slot PVC Screen
17				--	Brown CLAYEY SILTY SAND, wet. No odor, no staining.			
18								
19					Orange SANDY CLAY, trace gravel, wet.			
					SAND & fine GRAVEL, subrounded, wet.			
20								
21	AUGER							
22					Total Depth 22 feet			

Project: **Arch Street**	Boring/Well ID: **MW-10**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Cribbs & Associates Driller: Calvin Logged By: MLK	Depth of Boring 22 feet Date Started: 10/07/13 Date Completed: 10/10/13	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.020" Length: 15 feet

Depth (feet)	Sample No/type	Recovery- feet	Blows/0.5 ft	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0									Flushmount Cover
						CORE DRILL	CONCRETE (0.5 ft)		Expandable End Cap
1									Washed Sand
2									Bentonite chips
3						Gravel, silt, brick, cinders, slag (fill).			2" dia. PVC Riser
4									
5									Bentonite pellets
6						Light brown, silty CLAY, moist, stiff, no odor, no staining.			
7									
8									
9						Light brown, sandy, silty CLAY, moist, stiff, no odor, no staining.			
10									
11						HOLLOW STEM AUGER (Soil descriptions are from MW-10D)			
12						Dark gray, clayey GRAVEL, moist, coarse, angular, no odor, no staining.			
13									
14						Ligh brown sandy SILT, very moist to wet, black stained from 13 to 16', weak sheen 13 to 14', faint odor.			
15									Washed Sand
16									2" dia., 0.020" Slot PVC Screen
17									
18						Poor Recovery.			Poor recovery from 16 to 20 feet.
19									
20									
21						Ligh brown sandy SILT, some 3" CLAY zones, wet, no odor, no staining.			
22									
						Total Depth 22 ft.			

Project: **Arch Street**	Boring/Well ID: **MW-10D**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Cribbs & Associates Driller: Calvin Logged By: MLK	Depth of Boring 35 feet Date Started: 10/07/13 Date Completed: 10/10/13	Well Construction Depth of Well 34.8 feet Diameter of Casing 2" Well Screen Slot: 0.020" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	CORE DRILL				CONCRETE (0.5 ft)			Expandable End Cap
2	HAND AUGER				Gravel, silt, brick, cinders, slag (fill).			Washed Sand
4								
6	G-1	GEOPROBE	1105	0 0	Light brown, silty CLAY, moist, stiff, no odor, no staining.			2" dia. PVC Riser
8								
10	G-2		1112	0 0	Light brown, sandy, silty CLAY, moist, stiff, no odor, no staining (to 11.5'). Dark gray, clayey GRAVEL, moist, coarse, angular, no odor, no staining (11.5 to 12').			Bentonite chips
12								
14	G-3		1117	0 0 (LAB)	Light brown sandy SILT, very moist to wet, black stained from 13 to 16', weak sheen 13 to 14', faint odor.			
16								
18	G-4		1124	2 1	Poor recovery.			
20								
22	G-5		1134	1 2	Light brown sandy SILT, some 3" CLAY zones, wet, no odor, no staining (to 23.5'.)			
24								Bentonite pellets
26	G-6		1145	12 1	Dark gray SAND and GRAVEL, wet, fine, dense, rounded, no odor, no staining (to 27.5').			
28								
30	HOLLOW STEM AUGER				Light brown, silty SAND, wet, medium dense, no odor, no staining.			Washed Sand
32								2" dia., 0.020" Slot PVC Screen
34								
36					Total Depth 35 feet			
38					Note: Borehole was augered for well installation.			
40								
42								
44								

Project: **Arch Street**	Boring/Well ID: **MW-11**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Cribbs & Associate Driller: Calvin Logged By: PAR	Depth of Boring 22 feet Date Started: 10/07/13 Date Completed: 10/09/13	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.020" Length: 15 feet

Depth (feet)	Sample No/type	Recovery- feet	Blows/0.5 ft	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0									Flushmount Cover
0	CORE DRILL					CONCRETE (0.5 ft)			Expandable End Cap
1						Brick, brown SAND, slag, sandy CLAY, moist, no odor, no staining. (fill)			Washed Sand
2									Bentonite chips
3	HAND AUGER								2" dia. PVC Riser
4						Brown SAND and sandy CLAY, moist, no odor, no staining.			
5									Bentonite pellets
6	G-1								Poor recovery from 4 to 8 feet.
7									
8						Light brown, silty CLAY, moist, stiff, no odor, no staining.			
9	G-2				0				
10									
11					0	Brown clayey SILT with fine SAND, moist, no odor, no staining.			
12									
13	G-3				0	Light brown silty SAND with trace CLAY, very moist to wet, no odor, no staining.			
14					0				
15									Washed Sand
16					0	Light brown sandy SILT, wet, no odor, no staining.			2" dia., 0.020" Slot PVC Screen
17	G-4								
18					750 LAB				
19						Fine GRAVEL with some CLAY and SAND, wet, staining, old gasoline odor.			Note: borehole was augered for well installation
20					80				
21	G-5								
22					4	Brown SAND and GRAVEL with trace CLAY, wet, dense, no odor, no staining.			
23									

GEOPROBE

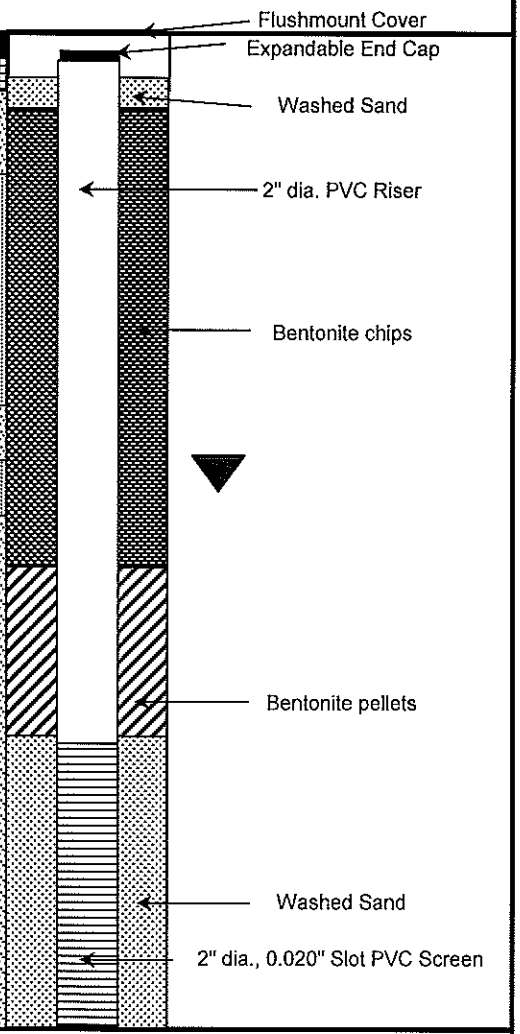
Total Depth 23 ft.

Project: **Arch Street**	Boring/Well ID: **MW-12**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Cribbs & Associates Driller: Calvin Logged By: MLK	Depth of Boring 22 feet Date Started: 10/07/13 Date Completed: 10/14/13	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.020" Length: 15 feet

Depth (feet)	Sample No/type	Recovery- feet	Blows/0.5 ft	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0	CORE DRILL					CONCRETE (0.5 ft)		Flushmount Cover Expandable End Cap	
1						Gravel, black silt, brick (fill).		Washed Sand	
2								Bentonite chips	
3						Brown SAND and CLAY, moist (Alluvial).		2" dia. PVC Riser	
4									
5								Bentonite pellets	
6						Brown SILT, moist, medium dense (Alluvial).			
7									
8									
9									
10						Dark gray SILT and SAND (SP), moist, loose, medium dense (Alluvial).			
11	HOLLOW STEM AUGER (Soil descriptions are from MW-12D)								
12						Gray SILT, moist, medium dense, wet zone at 11 ft (Alluvial).			
13									
14						Gray SAND, moist, loose, medium-fine grained, no odor (Alluvial).			
15						Gray sandy SILT, moist, loose, medium dense, fine grained, odor (Alluvial).		Washed Sand	
16								2" dia., 0.020" Slot PVC Screen	
17						Gray SAND, wet, loose, fine grained, grades to tan at 18.5 ft (Alluvial).			
18									
19						Brown SAND and GRAVEL, wet, dense, medium coarse, angular (Alluvial).			
20									
21						Brown SAND and GRAVEL, wet, dense, fine to coarse, fine to medium, rounded (Alluvial).			
22									
						Total Depth 22 ft.			

Project: **Arch Street**	Boring/Well ID: **MW-12D**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Cribbs & Associates Driller: Calvin Logged By: MLK	Depth of Boring 35 feet Date Started: 10/07/13 Date Completed: 10/14/13	Well Construction Depth of Well 34.8 feet Diameter of Casing 2" Well Screen Slot: 0.020" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Blows/0.5 ft	Time	PID Reading-ppm	DESCRIPTION
0						
	CORE DRILL					CONCRETE (0.5 ft)
2						GRAVEL, black SILT, Brick to 1.5' (fill)
	HAND AUGER					Brown SAND and CLAY (CL), moist (Alluvial).
4						
6	S-1	1.9	4 / 4 6 / 7	0803	0	Brown SILT (ML), moist, medium dense (to 10 ft) (Alluvial).
8	S-2	1.8	3 / 4 5 / 5	0814	0	
10	S-3	1.8	2 / 3 3 / 4	0924	4	Dark gray SILT and SAND (SP), moist, loose, medium dense (10 to 11 ft) (Alluvial).
12	S-4	1	4 / 4 7 / 6	0936	6	Gray SILT (ML), moist, medium dense, wet zone at 11 ft, medium dense (Alluvial).
14	S-5	1.6	3 / 4 4 / 4	0853	13	Gray SAND (SP), moist, loose, medium-fine grained, no odor (Alluvial).
16	S-6	1.4	5 / 4 3 / 3	0903	10	Gray sandy SILT (ML), moist, loose, med. dense, fine grained, odor (15 to 15.5 ft)(Alluvial).
18	S-7	1.4	4 / 4 4 / 4	0915	26	Gray SAND (SP), wet, loose, fine grained, grades to tan at 18.5 ft (Alluvial).
20	S-8	1.6	2 / 21 18 /	0936	3	Brown SAND and GRAVEL (GW), wet, dense, medium coarse, angular (Alluvial).
22	S-9	1.4	19 / 16 /	0952	2	Brown SAND and GRAVEL (GW), wet, dense, fine to coarse, fine to medium rounded (Alluvial).
24	S-10	1.5	5 / 8 9 / 12	1006	0	
26	S-11	0.7	39 / 22 /	1025	1	
28	S-12	1.7	12 / 19 /	1041	0	
30	S-13		14 / 29 /	1103	0	
32	S-14	1.5	15 / 29 /	1124	0	Brown silty SAND and GRAVEL (GW), moist to wet, dense, fine-medium grained, coarse, sub-rounded (Alluvial).
34	S-15	1.5	12 / 24 /	1143	0	
36						Total Depth 35 feet
38						
40						
42						
44						



Project: **Arch Street**	Well ID: **EW-1**	Page 1 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Geologist: Paul Rogers	Depth of Boring: 29ft. Date Started: 6/27/02 Date Completed: 6/27/02	Monitoring Well Construction Depth of Well: 29 ft. Diameter of Casing: 4.0 in. Well Screen: 0.020 Slot; Length: 20 ft. TOC Elev.: 99.64 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel flush-mount cover and casing Locking end cap
1								sand
2								
3								
4								4" diameter, Schedule 40 PVC riser
5								Bentonite Chips
6								
7								Bentonite Seal
8								
9								
10	AUGER				No soil samples collected			
11								
12								
13								
14								4" dia. 0.020 Slot, PVC Screen
15								
16								
17								Silica Sand Pack
18								
19								
20								

Project: **Arch Street**	Well ID: **EW-1**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Geologist: Paul Rogers	Depth of Boring: 29ft. Date Started: 6/27/02 Date Completed: 6/27/02	Monitoring Well Construction Depth of Well: 29 ft. Diameter of Casing: 4.0 in. Well Screen: 0.020 Slot; Length: 20 ft. TOC Elev.: 99.64 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21								4" dia. 0.020 Slot, PVC Screen
22								Silica Sand Pack
23								
24								
25	AUGER				No soil samples collected			
26								
27								
28								
29								
					Total Depth 29 feet			
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Well ID: **EW-2**	Page 1 of 2
Location: Kittanning, PA	Depth of Boring: 27ft.	Monitoring Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 07/05/02	Depth of Well: 27 ft.
Driller: Brian Hobbes	Date Completed: 07/05/02	Diameter of Casing: 4.0 in.
Inspector: Kevin Dyson		Well Screen: 0.020 Slot; Length: 15 ft.
		TOC Elev.: 100.50 ft.

Depth (feet)	Sample Time	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel flush-mount cover and casing
								Locking end cap
1								sand
2								
3								
4					AUGER			4" diameter, Schedule 40 PVC riser
5								Bentonite Chips
6								
7								Bentonite Seal
8								
9	9:30	3 3 6 5	0.8	200				(heavy petroleum odor, staining)
10								
11								
12								
13					AUGER			
14								
15								4" dia. 0.020 Slot, PVC Screen
16								
17	10:15	4 8 8 14	2.0	--				Silica Sand Pack
18					Gravel @ 18 ft			(heavy petroleum odor)
19					AUGER			
20								

Project: **Arch Street**	Well ID: **EW-2**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Inspector: Kevin Dyson	Depth of Boring: 27ft. Date Started: 07/05/02 Date Completed: 07/05/02	Monitoring Well Construction Depth of Well: 27 ft. Diameter of Casing: 4.0 in. Well Screen: 0.020 Slot; Length: 15 ft. TOC Elev.: 100.50 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21							4" dia. 0.020 Slot, PVC Screen	
22							Silica Sand Pack	
23					AUGER			
24								
25								
26								
27								
28								
29					Total Depth 27 feet			
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring/Well ID: **EW-3**	Page 1 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Geologist: Paul Rogers	Depth of Boring: 28ft. Date Started: 6/26/02 Date Completed: 6/27/02	Monitoring Well Construction Depth of Well: 28 ft. Diameter of Casing: 4.0 in. Well Screen: 0.020 Slot; Length: 20 ft. TOC Elev.: 100.82 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Steel flush-mount cover and casing Locking end cap
1		Auger			concrete			
2								sand
3	S-1	1 1 1 1	1.3	0	Silt, sand and clay brick and cinders, loose, moist, (fill)			
4								4" diameter, Schedule 40 PVC riser
5	S-2	1 2 4 2	0.5	2				Bentonite Chips
6								
7	S-3	1 2 4 2	1.7	4	CLAYEY SILT, moist (alluvial)			Bentonite Seal
8								
9	S-4	4 4 4 3	1.7	5				
10								
11	S-5	2 2 4 5	1.8	5				
12								
13	S-6	3 5 5 4	1.9	20	Fine grained silty SAND, loose to medium dense. moist to wet.(alluvial)			groundwater encountered
14								
15	S-7	2 1 1 1	1.7	100				4" dia. 0.020 Slot, PVC Screen
16								
17	S-8	WOH 1 WOH 1	1.3	100				sheen on water Silica Sand Pack
18								
19	S-9	5 8 10 11	1.4	100	Silty SAND AND MEDIUM GRAVEL(alluvial)			
20								

Project: **Arch Street**	Boring/Well ID: **EW-3**	Page 2 of 2
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobbes Geologist: Paul Rogers	Depth of Boring: 28 ft. Date Started: 6/26/02 Date Completed: 6/276/02	Monitoring Well Construction Depth of Well: 28 ft. Diameter of Casing: 2.0 in. Well Screen: 0.020 Slot; Length: 10 ft. TOC Elev.: 100.82 ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
20								
21	S-9	6 8 10 6	0.8	--	Silty SAND AND MEDIUM GRAVEL, (alluvial)			4" dia. 0.020 Slot, PVC Screen
22								Silica Sand Pack
23								
24								
25	Auger							
26								
27								
28								
29	Total Depth 28 feet							
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

Project: **Arch Street**	Boring/Well ID: **GP-1 (VP-1)**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Aaron Hughes Geologist: Mike Keeliher	Depth of Boring: 8ft. Date Started: 02/16/05 Date Completed: 02/16/05	Monitoring Well Construction Depth of Well: 8 ft. Diameter of Casing: 0.75 in. Well Screen: 0.020 Slot; Length: 1.0 ft. TOC Elev.: N/A ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flush mount cover
					Concrete			Air valve fitting
1	Saw cut and excavate				Gravel and Cinders			Silica sand pack
					Gray-tan weathered shale, moist,(fill)			Caving in top two feet.
2	S-1	Macrocore	3.1	0				Bentonite Seal
3					Dark gray, brown clayey silt, trace brick, moist, (fill)			
4								0.75" dia. Schedule 40, PVC Riser
5					Brown silty clay, moist, (alluvial)			
6	S-2	Macrocore	3.1	0				0.75" dia. 0.020 Slot, PVC Screen
					Dark gray, brown, organic silty clay, moist (alluvial)			
7					Brown silty clay, damp, rooted, (alluvial)			
8								Silica sand pack
	Total Depth 8 feet							
9								
10								
11								
12								
13								

Project: **Arch Street**	Boring/Well ID: **GP-2 (VP-2)**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Aaron Hughes Geologist: Mike Keeliher	Depth of Boring: 8ft. Date Started: 02/16/05 Date Completed: 02/16/05	Monitoring Well Construction Depth of Well: 8 ft. Diameter of Casing: 0.75 in. Well Screen: 0.020 Slot; Length: 1.0 ft. TOC Elev.: N/A ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flush mount cover
					Concrete			Air valve fitting
1	Saw cut and excavate							Silica sand pack
					Pea gravel and sand, moist, loose, (fill)			Caving in top two feet.
2	S-1	Macrocore	1.7	0				Bentonite Seal
3					Brown, tan fine grained silty sand, moist (alluvial)			Saturated zone at 3.5 feet
4								0.75" dia. Schedule 40, PVC Riser
5								
6	S-2	Macrocore	3.6	0	Brown clayey silt, moist, stiff, trace gravel, (alluvial).			0.75" dia. 0.020 Slot, PVC Screen
7								
8								Silica sand pack
					Total Depth 8 feet			
9								
10								
11								
12								
13								

Project: **Arch Street**	Boring/Well ID: **GP-3 (VP-3)**	Page 1 of 1
Location: Kittanning. PA Drilling Co.: Chatfield Drilling Driller: Aaron Hughes Geologist: Mike Keeliher	Depth of Boring: 8ft. Date Started: 02/16/05 Date Completed: 02/16/05	Monitoring Well Construction Depth of Well: 8 ft. Diameter of Casing: 0.75 in. Well Screen: 0.020 Slot; Length: 1.0 ft. TOC Elev.: N/A ft.

Depth (feet)	Sample No/type	Blows/.5 ft	Recovery- feet	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flush mount cover
	Saw cut and excavate				Concrete			Air valve fitting
1					Pea gravel and sand, moist, loose, (fill)			Silica sand pack Caving in top two feet.
2	S-1	Macrocore	1.7	0				Bentonite Seal
3					Brown,tan fine grained silty sand, moist (alluvial)			
4								0.75" dia. Schedule 40, PVC Riser
5								
6	S-2	Macrocore	3.6	0	Brown clayey silt, moist, stiff, trace gravel, (alluvial).			0.75" dia. 0.020 Slot, PVC Screen
7								
8								Silica sand pack
	Total Depth 8 feet							
9								
10								
11								
12								
13								

Project: **Arch Street**	Boring/Well ID: **P-1**	Page 1 of 1
Location: Kittanning, PA	Depth of Boring 24 ft	Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 02/08/2011	NO WELL INSTALLED
Driller: Paul Loreno	Date Completed: 02/08/2011	
Logged By: Paul Rogers		

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4					Concrete			
1–4					Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.			
5–8	Push - 1	14"	14.2		Brown CLAY with gray staining, trace gravel, moist. Gasoline odor weak from 4 to 5 feet, moderate from 8 to 9 feet.			
9–12	Push - 2	11"	132	LAB				
13–16	Push - 3	27"	260	LAB	Gray CLAYEY SAND & GRAVEL, moist to wet, fine to coarse, sub-rounded gravel, several fine sand lenses. Very strong gasoline odor.			
17–20	Push - 4	3"	240					
21–24	Push - 5	14"	>2000	LAB				
21			10		Brown SAND & GRAVEL. No staining.			
25–28					Total Depth 24 feet			

Project: **Arch Street**	Boring/Well ID: **P-2**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Paul Loreno Logged By: Paul Rogers	Depth of Boring 24 ft Date Started: 02/08/2011 Date Completed: 02/08/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
5–8	Push - 1	20"	10.8		FILL Light gray SILTY CLAY, damp, medium-stiff to soft, some staining. Weak to moderate gasoline odor.			
9–12	Push - 2	39"	180	LAB	Gray SANDY CLAY, soft, damp, some staining. Moderate gasoline odor.		▼	Wet at 12 feet
13–16	Push - 3	23"	140		Gray-stained CLAYEY SAND, grades to fine sand, moist to wet. Gasoline odor. Trace free product.			
17–20	Push - 4	11"	260	LAB	Gray-stained CLAYEY SAND & GRAVEL, fine to coarse gravel, very moist. Gasoline odor.			
21–24	Push - 5	23"	76 2		Gray-stained SAND & GRAVEL, fine to coarse gravel, wet. Moderate gasoline odor from 20 to 21 feet, no gasoline odor from 21 to 22 feet.			
25–28					Total Depth 24 feet			

Project: **Arch Street**	Boring/Well ID: **P-3**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobson Logged By: Paul Rogers	Depth of Boring 20 ft Date Started: 02/10/2011 Date Completed: 02/10/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
5–8	Push - 1	48"	0		Brown CLAY, stiff, damp. No odor, no staining.			
9	Push - 2	48"	0.25					
10–11			4		Brown SANDY CLAY, moist. No odor, no staining.			
11–12			180	LAB	Gray-stained CLAYEY SAND, very moist. Strong gasoline odor.		▼	Wet at 12 feet
12–13	Push - 3	15"	130		Gray-stained SAND, some gravel, fine sand, wet. Gasoline odor.			
13			40		Brown SILTY CLAY, wet. No odor, no staining.			
14–16								
16–17	Push - 4	48"	190	LAB	Gray-stained SAND, fine, wet. Gasoline odor.			
17–18			90		Brown SILTY SAND, fine, wet. No odor.			
18–19			5		Gray-stained SAND, fine, wet. Strong gasoline odor.			
19–20			4	LAB	Brown SAND & GRAVEL, dense. No odor, no staining.			
20–28					Total Depth 20 feet			

Project: **Arch Street**	Boring/Well ID: **P-4**	Page 1 of 1
Location: Kittanning, PA	Depth of Boring 24 ft	Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 02/09/2011	NO WELL INSTALLED
Driller: Brian Hobson	Date Completed: 02/09/2011	
Logged By: Paul Rogers		

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
5–8	Push - 1	20"	3.8		GRAVEL (Fill).			
					Brown CLAY, stiff, damp. No odor, no staining.			
9–12	Push - 2	38"	26					
			94	LAB	Brown and gray-stained SANDY CLAY, grades to fine SAND, moist to very moist. Weak to moderate gasoline odor.			
13–16	Push - 3	27"	30		Fine GRAVEL, moist, no odor, no staining.			
			152		Gray SAND, fine, moist. Gasoline odor.			
17–20	Push - 4	24"	220	LAB	SAND & GRAVEL, moist. No odor, no staining.		▼	Wet at 20 feet
			152		Gray SAND, fine, moist. Moderate gasoline odor.			
21–24	Push - 5	20"	164	LAB	Gray SAND & GRAVEL, wet. Gasoline odor. Trace free product at 22 feet.			
			54		Brown SAND & GRAVEL, clean, wet. No odor, no staining.			
25–28	Total Depth 24 feet							

Project: **Arch Street**	Boring/Well ID: **P-5**	Page 1 of 1
Location: Kittanning, PA	Depth of Boring 24 ft	Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 02/08/2011	NO WELL INSTALLED
Driller: Paul Loreno	Date Completed: 02/08/2011	
Logged By: Paul Rogers		

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
5–8	Push - 1	30"	0		FILL			
					Brown CLAY, stiff, damp. No odor, no staining.			
9–10	Push - 2	41"	0					
10–11			4.6	LAB	Gray-stained SANDY CLAY, damp. Sewage odor, no petroleum odor.		▼	Wet at 12 feet
12–16	Push - 3	28"	190	LAB	Gray-stained CLAYEY SAND, very moist to wet with several fine sand lenses and fine to coarse gravel lenses (1 to 5-inches thick). Gasoline odor.			
17–20	Push - 4	29"	220		Gray-stained SAND & GRAVEL, fine sand, fine to coarse gravel, wet. Gasoline odor.			
20–21	Push - 5	25"	180	LAB				
21–22			24	LAB	Brown SAND & GRAVEL, dense, damp. No odor, no staining.			
23–24								
25–28	Total Depth 24 feet							

Project: **Arch Street**	Boring/Well ID: **P-6**	Page 1 of 1
Location: Kittanning, PA	Depth of Boring 24 ft	Well Construction
Drilling Co.: Chatfield Drilling	Date Started: 02/09/2011	NO WELL INSTALLED
Driller: Paul Loreno	Date Completed: 02/09/2011	
Logged By: Paul Rogers		

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
4–8	Push - 1	8"	0		Fill Brown CLAY, stiff, damp. No odor, no staining.			
8–12	Push - 2	34"	3.6					
			12	LAB	Gray SANDY CLAY, moist. Weak gasoline odor.			
12–16	Push - 3	8"	160	LAB	Gray-stained CLAYEY SAND, sand very fine, moist. Moderate gasoline odor		▼	Wet at 16 feet
16–20	Push - 4	22"	32		Brown CLAYEY SAND, moist to wet. Some staining.			
			130		Black-stained SAND & GRAVEL, fine gravel, wet. Gasoline odor.			
20–24	Push - 5	15"	6.6					
			1.4	LAB	Brown SAND & GRAVEL, dense. No odor, no staining.			
24–28					Total Depth 24 feet			

Project: **Arch Street**	Boring/Well ID: **P-7**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobson Logged By: Paul Rogers	Depth of Boring 20 ft Date Started: 02/10/2011 Date Completed: 02/10/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete		
5–8	Push - 1	34"	1		Brown CLAY, stiff, damp. No odor, no staining.		
9–10	Push - 2	48"	3				
10–11			45	LAB	Gray-stained SADNY CLAY, very moist. Weak gasoline odor.		
12–16	Push - 3	24"	150	LAB	Gray-stained SAND, fine, moist to wet. Gasoline odor.		▼ Free liquid at 16 feet
17–18	Push - 4	44"	150				
18			140	LAB	Brown SILTY SAND, wet. Decreasing odor.		
19					Gray SAND, fine, wet. No odors.		
20			6.5		Brown SAND & GRAVEL, dense, moist.		
21–28	Total Depth 20 feet						

Project: **Arch Street**	Boring/Well ID: **P-8**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobson Logged By: Paul Rogers	Depth of Boring 20 ft Date Started: 02/10/2011 Date Completed: 02/10/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
5–8	Push - 1	24"	0		Brown CLAY, stiff, damp. No odor, no staining.			
9–10	Push - 2	41"	2		Gray-stained SANDY CLAY, very moist. Gasoline odor.			
10			50	LAB				
11–16	Push - 3	22"	155	LAB	Gray-stained SAND, fine, very moist to wet. Strong gasoline odor.			Free liquid at 16 feet
17–18	Push - 4	37"	100					
18			200		Gray SILTY SAND, wet. Decreasing odor.			
19			20		Brown SAND & GRAVEL, dense, fine to coarse gravel. No odor.			
20–28					Total Depth 20 feet			

Project: **Arch Street**	Boring/Well ID: **P-10**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobson Logged By: Paul Rogers	Depth of Boring 28 ft Date Started: 02/09/2011 Date Completed: 02/09/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1-4					Concrete			
1-4					Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.			
4-8	Push - 1	23"	0.4		Gray CLAY, medium-stiff, damp. No odor.			
8-12	Push - 2	45"	220	LAB	Brown CLAY, medium-stiff to stiff, damp. Weak gasoline odor, minor petroleum staining.			
12-16	Push - 3	48"	340	LAB	Gray-stained SILTY CLAY, soft, moist to very moist. Strong gasoline odor.			
16-18	Push - 4	45"	280		Brown CLAY, soft.		▼	Wet at 18.5 feet
18-20			140		Gray-stained SAND grades to SAND & GRAVEL, fine to coarse gravel, wet, free water from 20 to 27 feet. Strong gasoline odor.			
20-24	Push - 5	19"	190					
24-26	Push - 6	24"	58					
26			17		Brown SAND & GRAVEL, dense, moist. No odor, no staining.			
26-28								
28					Total Depth 28 feet			

Project: **Arch Street**	Boring/Well ID: **P-11**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobson Logged By: Paul Rogers	Depth of Boring 28 ft Date Started: 02/09/2011 Date Completed: 02/09/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
0					Concrete			
1–4					Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.			
4–8	Push - 1	21"	0		Fill, dry. Sandstone in spoon tip.			
8–12	Push - 2	5"	0		Fill from above. No sample			Wet at 12 feet
12–16	Push - 3	17"	180		Gray CLAY, soft, wet. Weak gasoline odor.			
16–17	Push - 4	48"	194		Dark brown SANDY CLAY, very soft, free water.			
17–19			350	LAB	Dark brown CLAYEY SAND, very soft, free water, free product.			
19–20			128		Light brown SANDY CLAY, very soft, free water. Faint odor.			
20–22	Push - 5	43"	194	LAB				
22–24			126		Gray SAND & GRAVEL, fine to coarse, wet. Trace free product. Strong gasoline odor.			
24–26	Push - 6	42"	178					
26–27			7.2		Brown SAND. No odor.			
28					Total Depth 28 feet			

Project: **Arch Street**	Boring/Well ID: **P-12**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Paul Loreno Logged By: Paul Rogers	Depth of Boring 24 ft Date Started: 02/08/2011 Date Completed: 02/08/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1					Concrete			
2					Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.			
3								
4								
5	Push - 1	34"	4.6		Brown CLAY, stiff, damp. No odor, no staining.			
6								
7								
8								
9	Push - 2	45"	10.6		Brown SANDY CLAY, moist. Sewer odor, no petroleum odor, no staining.			
10								
11			190	LAB	Gray-stained SANDY CLAY, moist, increasing sand with depth. Gasoline odor.		▼	Wet at 12 feet
12								
13	Push - 3	23"	190	LAB	Gray-stained CLAYEY SAND, wet. Several 1" thick fine sand lenses. Strong gasoline odor.			
14								
15								
16								
17	Push - 4	39"	96		Brown SAND, with some CLAY, wet. Staining from 18 to 19 feet, faint to moderate odor.			
18								
19			98					
20					Brown SAND & GRAVEL, fine to coarse gravel, wet. Moderate gasoline odor.			
21	Push - 5	29"	80					
22			4		Brown SAND & GRAVEL, dense, damp. No odor.			
23								
24								
25					Total Depth 24 feet			
26								
27								
28								

Project: **Arch Street**	Boring/Well ID: **P-13**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: Chatfield Drilling Driller: Brian Hobson Logged By: Paul Rogers	Depth of Boring 20 ft Date Started: 02/09/2011 Date Completed: 02/09/2011	Well Construction NO WELL INSTALLED

Depth (feet)	Sample No/type	Recovery	PID Reading-ppm	Laboratory	DESCRIPTION	Lithology	Well Construction	Comments/Details
1–4	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				Concrete			
5–8	Push - 1	28"	2.2		FILL as brown CLAY and SHALE, dry. No odor, no staining.			
9–12	Push - 2	41"	340	LAB	Brown and gray mottled CLAY, medium stiff to soft, moist. Some black staining. Weak to strong gasoline odor.			
11–12					Brown SANDY CLAY, soft, very moist.		▼	Wet at 12 feet
13–16	Push - 3	44"	198		Brown CLAY grades to gray-stained CLAY, very soft, wet. Strong gasoline odor. Free liquid at 12.5 feet with free product.			
14–16			210	LAB	Gray SANDY CLAY, medium stiff, wet. Very strong gasoline odor.			
16–17					Brown SANDY CLAY, soft, wet. Weak to no gasoline odor.			
17–20	Push - 4	17"	4.6		Brown SAND & GRAVEL, fine to coarse, wet. No odor, no staining.			
21–28					Total Depth 20 feet			

ATTACHMENT B

June 13, 2005

The Hutchinson Group, Ltd.

Geophysical and Environmental Services

Ms. Sara Giordano, PhD
Insite Group, Inc.
92 E. Shenango St.
Sharpsville, Pennsylvania 16150
(724) 962-9386

Re: Geophysical Letter Report
200 North McKean Street, Kittanning, Pennsylvania
THG Project No. 464-3247

Dear Ms. Giordano:

The Hutchinson Group, Ltd. imaged the parking lot of the Honey Bear Mini-Market, 200 North McKean Street, Kittanning on June 10, 2005 using ground penetrating radar and time-domain electromagnetic mapping techniques (Figures 1 and 2). The area imaged comprised approximately 0.1 acre and consisted of concrete tarmac. The work was completed using a time-domain electromagnetic terrain conductivity meter (EM-61) and Ground Penetrating Radar (GPR; 250-mHz).

Time-domain electromagnetic (TDEM) imaging consists of a transmitter antenna that emits a pulsed electromagnetic signal and a receiver that measures the slow decay of energy from excited ferrous and non-ferrous sources (in millivolts). The TDEM was deployed to continuously collect data in 3-foot wide swaths, thus this survey encompasses 100% of the survey area (Figure 1). The GPR was deployed to detect subsurface anomalies that may represent free-product on water. The findings and conclusions in this report are stated with a reasonable degree of scientific certainty.

THG's findings and conclusions are as follows:

- The geophysical survey area contains a concrete tarmac with a fuel island and mini-market;
- A geophysical anomaly that may represent a free-product accumulation was located between the fuel island and McKean Street; and,
- No underground storage tanks were identified through geophysical methods.

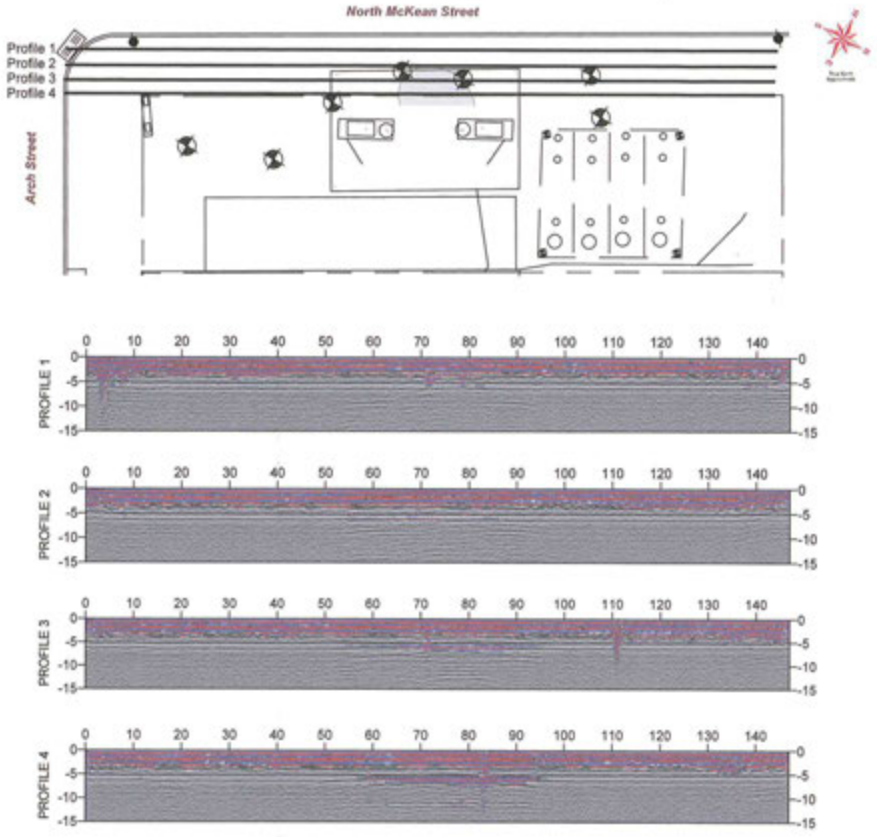
Geophysical investigations are a non-invasive method of interpreting physical properties of the shallow earth using electrical, electromagnetic, or mechanical energy. This document contains geophysical interpretations of responses to induced or real-world phenomena. As such, the measured phenomenon may be impacted by variables not readily identified in the field that can result in a false-positive or false-negative interpretation. THG makes no representations or warranties as to the accuracy of the interpretations.

Should you have any questions or require additional information, please contact our office at (724) 325-3996 or via e-mail pjh@geo-image.com.

Respectfully,
The Hutchinson Group, Ltd.

Peter J. Hutchinson, PhD, PG
Senior Scientist

Enclosures



Legend

Monitoring Well

Geophysical Anomaly

Notes

Geophysical survey conducted June 10, 2005 using Geonics time-domain electromagnetic conductivity meter and Sensors & Software 250 mHz antenna array ground penetrating radar. Locations are approximate.

Ground penetrating radar profiles:
Horizontal scale 1 in = 20 ft
Vertical scale 1 in = 20 ft
No vertical exaggeration.

0 ft 10 ft 20 ft 30 ft 40 ft 50 ft

The Hutchinson Group, Ltd.

DES	PJH	6/10/05
DRN	PJH	6/10/05
CHK	PJH	6/10/05
REV		
PROJ. MGR.	PJH	

Geophysical Investigation
Honey Bear Mini-Market
200 North McKean Street
Kittanning, Pennsylvania

1 in = 20 ft

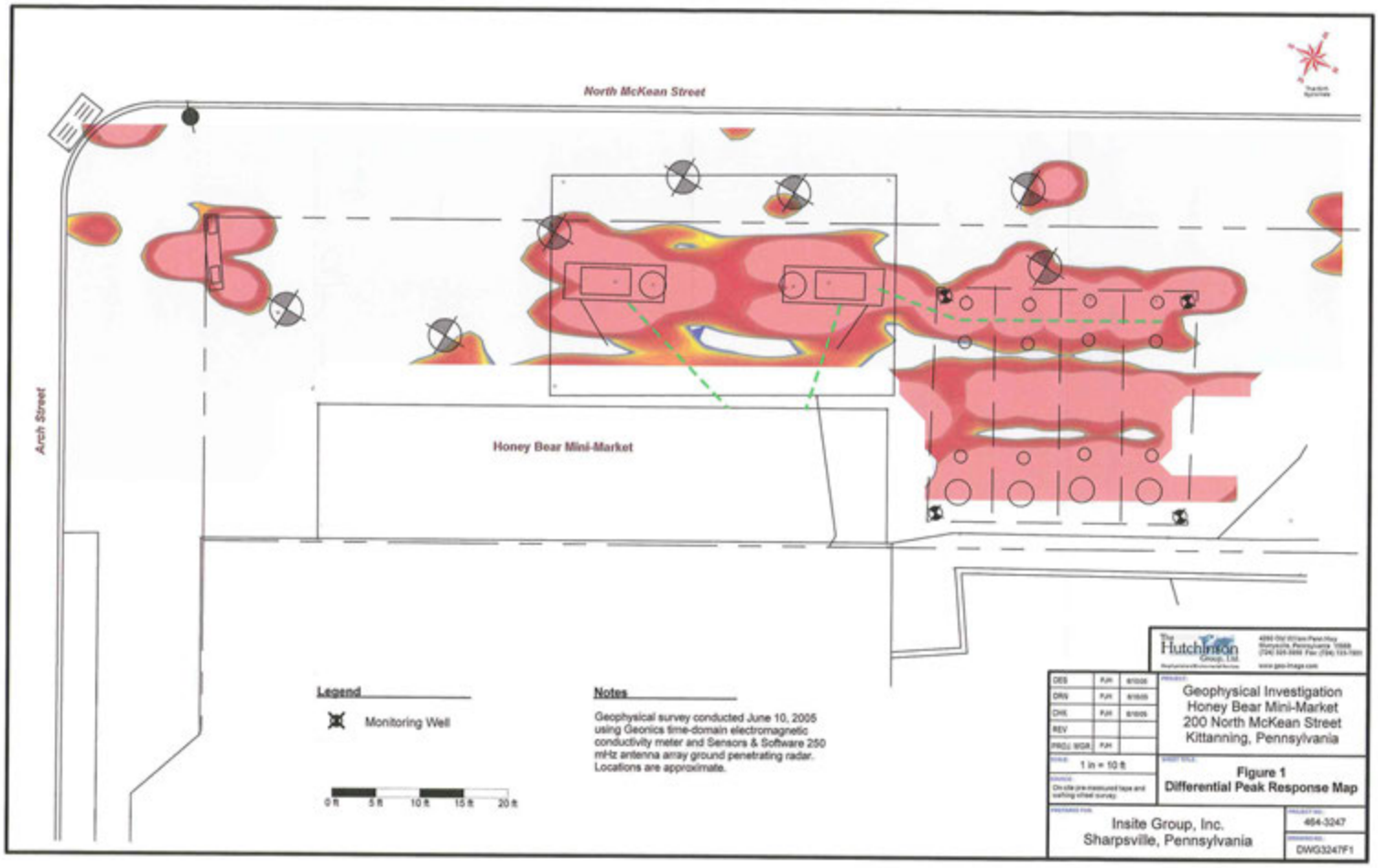
On-site pre-measured tape and walking wheel survey.

Figure 2
Ground Penetrating Radar Survey Map

Insite Group, Inc.
Sharpsville, Pennsylvania

464-3247

DWG3247F2


North McKean Street
Arch Street
Honey Bear Mini-Market
Legend
Monitoring Well
0 ft 5 ft 10 ft 15 ft 20 ft
Notes
Geophysical survey conducted June 10, 2005 using Geonics time-domain electromagnetic conductivity meter and Sensors & Software 250 mHz antenna array ground penetrating radar. Locations are approximate.
The Hutchinson Group, Ltd.
DES PJH 8/10/05
DRN PJH 8/10/05
CHK PJH 8/10/05
REV
PROJ MGR PJH
SCALE 1 in = 10 ft
SOURCE On-site pre-measured tape and walking wheel survey
PREPARED FOR Insite Group, Inc. Sharpsville, Pennsylvania
PROJECT Geophysical Investigation Honey Bear Mini-Market 200 North McKean Street Kittanning, Pennsylvania
SHEET TITLE Figure 1 Differential Peak Response Map
PROJECT NO. 464-3247
DRAWING NO. DWG3247F1

ATTACHMENT C

12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Monday February 21, 2011

Report Number: L501223
Samples Received: 02/10/11
Client Project: ARCH STEEL

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-01

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-1 8-12FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 09:57

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/16/11	1
Benzene	0.018	0.00042	0.0012	mg/kg		8260B	02/11/11	1
Ethylbenzene	0.14	0.00032	0.0012	mg/kg		8260B	02/11/11	1
Isopropylbenzene	0.032	0.00033	0.0012	mg/kg		8260B	02/11/11	1
Methyl tert-butyl ether	0.00056	0.00036	0.0012	mg/kg	J	8260B	02/11/11	1
Naphthalene	0.076	0.00028	0.0061	mg/kg		8260B	02/11/11	1
Toluene	0.0097	0.00033	0.0061	mg/kg		8260B	02/11/11	1
Total Xylenes	0.30	0.00046	0.0036	mg/kg		8260B	02/11/11	1
Surrogate Recovery								
Toluene-d8	121.			% Rec.	J1	8260B	02/11/11	1
Dibromofluoromethane	109.			% Rec.		8260B	02/11/11	1
4-Bromofluorobenzene	121.			% Rec.		8260B	02/11/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-02

Site ID : 03-07315

Project # : ARCH STEEL

Date Received : February 10, 2011
Description : Soil

Sample ID : P-1 12-16FT

Collected By : Sara Giordano
Collection Date : 02/08/11 10:03

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	85.			%		2540G	02/16/11	1
Benzene	9.0	1.6	4.4	mg/kg		8260B	02/11/11	3750
Ethylbenzene	89.	1.2	4.4	mg/kg		8260B	02/11/11	3750
Isopropylbenzene	8.5	1.2	4.4	mg/kg		8260B	02/11/11	3750
Methyl tert-butyl ether	U	1.3	4.4	mg/kg		8260B	02/11/11	3750
Naphthalene	22.	1.0	22.	mg/kg		8260B	02/11/11	3750
Toluene	37.	1.2	22.	mg/kg		8260B	02/11/11	3750
Total Xylenes	470	1.7	13.	mg/kg		8260B	02/11/11	3750
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	02/11/11	3750
Dibromofluoromethane	98.1			% Rec.		8260B	02/11/11	3750
4-Bromofluorobenzene	114.			% Rec.		8260B	02/11/11	3750

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-03

Site ID : 03-07315

Project # : ARCH STEEL

Date Received : February 10, 2011
Description : Soil

Sample ID : P-1 20-20.5FT

Collected By : Sara Giordano
Collection Date : 02/08/11 10:49

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	90.			%		2540G	02/16/11	1
Benzene	1.7	0.028	0.074	mg/kg		8260B	02/11/11	66.5
Ethylbenzene	4.6	0.021	0.074	mg/kg		8260B	02/11/11	66.5
Isopropylbenzene	0.76	0.022	0.074	mg/kg		8260B	02/11/11	66.5
Methyl tert-butyl ether	0.14	0.024	0.074	mg/kg		8260B	02/11/11	66.5
Naphthalene	2.3	0.019	0.37	mg/kg		8260B	02/11/11	66.5
Toluene	0.41	0.022	0.37	mg/kg		8260B	02/11/11	66.5
Total Xylenes	22.	0.030	0.22	mg/kg		8260B	02/11/11	66.5
Surrogate Recovery								
Toluene-d8	111.			% Rec.		8260B	02/11/11	66.5
Dibromofluoromethane	92.8			% Rec.		8260B	02/11/11	66.5
4-Bromofluorobenzene	108.			% Rec.		8260B	02/11/11	66.5

Results listed are dry weight basis.
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RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-04

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-2 8-12FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 11:32

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/16/11	1
Benzene	0.010	0.00042	0.0012	mg/kg		8260B	02/11/11	1
Ethylbenzene	0.0028	0.00032	0.0012	mg/kg		8260B	02/11/11	1
Isopropylbenzene	0.0029	0.00033	0.0012	mg/kg		8260B	02/11/11	1
Methyl tert-butyl ether	0.023	0.00036	0.0012	mg/kg		8260B	02/11/11	1
Naphthalene	0.0017	0.00028	0.0060	mg/kg	J	8260B	02/11/11	1
Toluene	0.0043	0.00033	0.0060	mg/kg	J	8260B	02/11/11	1
Total Xylenes	0.0065	0.00046	0.0036	mg/kg		8260B	02/11/11	1
Surrogate Recovery								
Toluene-d8	110.			% Rec.		8260B	02/11/11	1
Dibromofluoromethane	107.			% Rec.		8260B	02/11/11	1
4-Bromofluorobenzene	104.			% Rec.		8260B	02/11/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-05

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-2 16-20FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 11:52

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	92.			%		2540G	02/16/11	1
Benzene	2.6	0.14	0.35	mg/kg		8260B	02/11/11	320
Ethylbenzene	11.	0.10	0.35	mg/kg		8260B	02/11/11	320
Isopropylbenzene	1.3	0.11	0.35	mg/kg		8260B	02/11/11	320
Methyl tert-butyl ether	U	0.11	0.35	mg/kg		8260B	02/11/11	320
Naphthalene	3.0	0.090	1.7	mg/kg		8260B	02/11/11	320
Toluene	19.	0.11	1.7	mg/kg		8260B	02/11/11	320
Total Xylenes	53.	0.15	1.0	mg/kg		8260B	02/11/11	320
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	02/11/11	320
Dibromofluoromethane	98.3			% Rec.		8260B	02/11/11	320
4-Bromofluorobenzene	115.			% Rec.		8260B	02/11/11	320

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-06

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-5 10-12FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 13:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/16/11	1
Benzene	0.0026	0.00042	0.0012	mg/kg		8260B	02/11/11	1
Ethylbenzene	U	0.00032	0.0012	mg/kg		8260B	02/11/11	1
Isopropylbenzene	U	0.00033	0.0012	mg/kg		8260B	02/11/11	1
Methyl tert-butyl ether	U	0.00036	0.0012	mg/kg		8260B	02/11/11	1
Naphthalene	0.00052	0.00028	0.0060	mg/kg	J	8260B	02/11/11	1
Toluene	0.00077	0.00033	0.0060	mg/kg	J	8260B	02/11/11	1
Total Xylenes	0.0062	0.00046	0.0036	mg/kg		8260B	02/11/11	1
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	02/11/11	1
Dibromofluoromethane	109.			% Rec.		8260B	02/11/11	1
4-Bromofluorobenzene	112.			% Rec.		8260B	02/11/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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Reported: 02/16/11 13:16 Revised: 02/21/11 09:03

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-07

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-5 12-16FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 13:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/16/11	1
Benzene	2.0	0.17	0.49	mg/kg		8260B	02/11/11	410
Ethylbenzene	25.	0.13	0.49	mg/kg		8260B	02/11/11	410
Isopropylbenzene	10.	0.14	0.49	mg/kg		8260B	02/11/11	410
Methyl tert-butyl ether	U	0.14	0.49	mg/kg		8260B	02/11/11	410
Naphthalene	5.3	0.11	2.4	mg/kg		8260B	02/11/11	410
Toluene	6.8	0.14	2.4	mg/kg		8260B	02/11/11	410
Total Xylenes	120	0.19	1.5	mg/kg		8260B	02/11/11	410
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/11/11	410
Dibromofluoromethane	95.4			% Rec.		8260B	02/11/11	410
4-Bromofluorobenzene	104.			% Rec.		8260B	02/11/11	410

Results listed are dry weight basis.
U = ND (Not Detected)
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RDL = Reported Detection Limit = LOQ = PQL = EQL
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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-08

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-5 20-21FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 14:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	88.			%		2540G	02/16/11	1
Benzene	0.33	0.047	0.12	mg/kg		8260B	02/11/11	110
Ethylbenzene	0.55	0.035	0.12	mg/kg		8260B	02/11/11	110
Isopropylbenzene	0.36	0.037	0.12	mg/kg		8260B	02/11/11	110
Methyl tert-butyl ether	U	0.039	0.12	mg/kg		8260B	02/11/11	110
Naphthalene	0.17	0.031	0.63	mg/kg	J	8260B	02/11/11	110
Toluene	0.14	0.037	0.63	mg/kg	J	8260B	02/11/11	110
Total Xylenes	2.0	0.051	0.38	mg/kg		8260B	02/11/11	110
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	02/11/11	110
Dibromofluoromethane	97.8			% Rec.		8260B	02/11/11	110
4-Bromofluorobenzene	118.			% Rec.		8260B	02/11/11	110

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-09

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-5 21-22FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 14:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	89.			%		2540G	02/16/11	1
Benzene	0.00072	0.00042	0.0011	mg/kg	J	8260B	02/11/11	1
Ethylbenzene	0.0011	0.00032	0.0011	mg/kg	J	8260B	02/11/11	1
Isopropylbenzene	0.00085	0.00033	0.0011	mg/kg	J	8260B	02/11/11	1
Methyl tert-butyl ether	U	0.00036	0.0011	mg/kg		8260B	02/11/11	1
Naphthalene	0.00055	0.00028	0.0056	mg/kg	J	8260B	02/11/11	1
Toluene	0.00040	0.00033	0.0056	mg/kg	J	8260B	02/11/11	1
Total Xylenes	0.0045	0.00046	0.0034	mg/kg		8260B	02/11/11	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	02/11/11	1
Dibromofluoromethane	107.			% Rec.		8260B	02/11/11	1
4-Bromofluorobenzene	111.			% Rec.		8260B	02/11/11	1

Results listed are dry weight basis.
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MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-10

Site ID : 03-07315

Project # : ARCH STEEL

Date Received : February 10, 2011
Description : Soil

Sample ID : P-1 2 10-12FT

Collected By : Sara Giordano
Collection Date : 02/08/11 15:08

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/16/11	1
Benzene	U	0.14	0.41	mg/kg		8260B	02/14/11	340
Ethylbenzene	6.3	0.11	0.41	mg/kg		8260B	02/14/11	340
Isopropylbenzene	2.3	0.11	0.41	mg/kg		8260B	02/14/11	340
Methyl tert-butyl ether	U	0.12	0.41	mg/kg		8260B	02/14/11	340
Naphthalene	5.4	0.095	2.0	mg/kg		8260B	02/14/11	340
Toluene	0.35	0.11	2.0	mg/kg	J	8260B	02/14/11	340
Total Xylenes	13.	0.16	1.2	mg/kg		8260B	02/14/11	340
Surrogate Recovery								
Toluene-d8	109.			% Rec.		8260B	02/14/11	340
Dibromofluoromethane	90.0			% Rec.		8260B	02/14/11	340
4-Bromofluorobenzene	90.3			% Rec.		8260B	02/14/11	340

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:
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Reported: 02/16/11 13:16 Revised: 02/21/11 09:03
L501223-10 (V8260BTEXMNI) - Non-target compounds too high to run at a lower dilution.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 21,2011

ESC Sample # : L501223-11

Date Received : February 10, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-1 2 12-16FT

Project # : ARCH STEEL

Collected By : Sara Giordano
Collection Date : 02/08/11 15:13

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.			%		2540G	02/16/11	1
Benzene	0.38	0.15	0.43	mg/kg	J	8260B	02/14/11	355
Ethylbenzene	27.	0.11	0.43	mg/kg		8260B	02/14/11	355
Isopropylbenzene	3.6	0.12	0.43	mg/kg		8260B	02/14/11	355
Methyl tert-butyl ether	U	0.13	0.43	mg/kg		8260B	02/14/11	355
Naphthalene	14.	0.099	2.2	mg/kg		8260B	02/14/11	355
Toluene	0.52	0.12	2.2	mg/kg	J	8260B	02/14/11	355
Total Xylenes	69.	0.16	1.3	mg/kg		8260B	02/14/11	355
Surrogate Recovery								
Toluene-d8	109.			% Rec.		8260B	02/14/11	355
Dibromofluoromethane	86.7			% Rec.		8260B	02/14/11	355
4-Bromofluorobenzene	83.6			% Rec.		8260B	02/14/11	355

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:
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L501223-11 (V8260BTEXMNI) - Non-target compounds too high to run at a lower dilution.

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L501223-01	WG521052	SAMP	Methyl tert-butyl ether	R1571470	J
	WG521052	SAMP	Toluene-d8	R1571470	J1
L501223-04	WG521052	SAMP	Naphthalene	R1571470	J
	WG521052	SAMP	Toluene	R1571470	J
L501223-06	WG521052	SAMP	Naphthalene	R1571470	J
	WG521052	SAMP	Toluene	R1571470	J
L501223-08	WG521052	SAMP	Naphthalene	R1571470	J
	WG521052	SAMP	Toluene	R1571470	J
L501223-09	WG521152	SAMP	Benzene	R1573051	J
	WG521152	SAMP	Ethylbenzene	R1573051	J
	WG521152	SAMP	Isopropylbenzene	R1573051	J
	WG521152	SAMP	Naphthalene	R1573051	J
	WG521152	SAMP	Toluene	R1573051	J
L501223-10	WG521424	SAMP	Toluene	R1574612	J
L501223-11	WG521424	SAMP	Benzene	R1574612	J
	WG521424	SAMP	Toluene	R1574612	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

E023

Chain of Custody
Page 1 of 2

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-SS

Collected by: Sara Giordano

Site/Facility ID#: 03=07315

P.O.#:

Collected by (signature): Sara Giordano

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

Analysis/Container/Preservati

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
P-1 8-12'	Grab	SS		2-8-11	9:57	5	X	X	X		LS01223 -01
P-1 12-16'	Grab	SS		2-8-11	10:03	5	X	X	X		-02
P-1 20-20.5'	Grab	SS		2-8-11	10:49	4	X	X	X		-03
P-2 8-12'	Grab	SS		2-8-11	11:32	5	X	X	X		-04
P-2 16-20'	Grab	SS		2-8-11	11:52	5	X	X	X		-05
P-5 10-12'	Grab	SS		2-8-11	13:35	5	X	X	X		-06
P-5 12-16'	Grab	SS		2-8-11	13:50	5	X	X	X		-07
P-5 20-21'	Grab	SS		2-8-11	14:15	5	X	X	X		-08
P-5 21-22'	Grab	SS		2-8-11	14:15	5	X	X	X		-09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: Quote INSITE 020811S 4341 9800 8951 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Lisa Kelly	2/9/11	12:28			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4°C / Bottles Received: 58 HTB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Tom Wolen	Date: 2/10/11 / Time: 1015	pH Checked: / NCF:

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-SS

Collected by: Sara Giordano

Site/Facility ID#: 03=07315

P.O.#:

Collected by (signature): Sara Giordano

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

Chain of Custody
Page 2 of 2

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Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
✓ P-12 10-12'	Grab	SS		2-8-11	15:08	5	X	X	X		L501223-10
✓ P-12 12-16'	Grab	SS		2-8-11	15:13	5	X	X	X		-11

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐	Condition: (lab use only)
Leslie Kelly	2/9/11	12:58			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4°C / Bottles Received: 5	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2/10/11 / Time: 1015	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Friday February 18, 2011

Report Number: L501413
Samples Received: 02/11/11
Client Project: ARCH STREET

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : February 11, 2011
Description : Soil

Sample ID : P-6 12-14 FT

Collected By : Sara Giordano
Collection Date : 02/09/11 09:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.			%		2540G	02/18/11	1
Benzene	1.2	0.12	0.33	mg/kg		8260B	02/13/11	275
Ethylbenzene	11.	0.087	0.33	mg/kg		8260B	02/13/11	275
Isopropylbenzene	7.3	0.092	0.33	mg/kg		8260B	02/13/11	275
Methyl tert-butyl ether	U	0.098	0.33	mg/kg		8260B	02/13/11	275
Naphthalene	4.6	0.077	1.6	mg/kg		8260B	02/13/11	275
Toluene	0.37	0.092	1.6	mg/kg	J	8260B	02/13/11	275
Total Xylenes	17.	0.13	0.98	mg/kg		8260B	02/13/11	275
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/13/11	275
Dibromofluoromethane	103.			% Rec.		8260B	02/13/11	275
4-Bromofluorobenzene	105.			% Rec.		8260B	02/13/11	275

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-02

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-6 20-24 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 09:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	90.			%		2540G	02/18/11	1
Benzene	0.0011	0.00042	0.0011	mg/kg	J	8260B	02/13/11	1
Ethylbenzene	U	0.00032	0.0011	mg/kg		8260B	02/13/11	1
Isopropylbenzene	U	0.00033	0.0011	mg/kg		8260B	02/13/11	1
Methyl tert-butyl ether	0.00051	0.00036	0.0011	mg/kg	J	8260B	02/13/11	1
Naphthalene	U	0.00028	0.0055	mg/kg		8260B	02/13/11	1
Toluene	0.00054	0.00033	0.0055	mg/kg	J	8260B	02/13/11	1
Total Xylenes	U	0.00046	0.0033	mg/kg		8260B	02/13/11	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/13/11	1
Dibromofluoromethane	114.			% Rec.		8260B	02/13/11	1
4-Bromofluorobenzene	102.			% Rec.		8260B	02/13/11	1

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-03

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-10 8-12 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 10:49

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.			%		2540G	02/18/11	1
Benzene	U	0.18	0.50	mg/kg		8260B	02/13/11	415
Ethylbenzene	3.5	0.13	0.50	mg/kg		8260B	02/13/11	415
Isopropylbenzene	1.4	0.14	0.50	mg/kg		8260B	02/13/11	415
Methyl tert-butyl ether	U	0.15	0.50	mg/kg		8260B	02/13/11	415
Naphthalene	1.9	0.12	2.5	mg/kg	J	8260B	02/13/11	415
Toluene	U	0.14	2.5	mg/kg		8260B	02/13/11	415
Total Xylenes	6.5	0.19	1.5	mg/kg		8260B	02/13/11	415
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/13/11	415
Dibromofluoromethane	104.			% Rec.		8260B	02/13/11	415
4-Bromofluorobenzene	113.			% Rec.		8260B	02/13/11	415

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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Reported: 02/18/11 15:46 Printed: 02/18/11 15:47

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-04

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-10 12-16 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 11:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/18/11	1
Benzene	1.2	0.040	0.11	mg/kg		8260B	02/14/11	95
Ethylbenzene	22.	0.030	0.11	mg/kg		8260B	02/14/11	95
Isopropylbenzene	3.4	0.032	0.11	mg/kg		8260B	02/14/11	95
Methyl tert-butyl ether	U	0.034	0.11	mg/kg		8260B	02/14/11	95
Naphthalene	9.2	0.027	0.57	mg/kg		8260B	02/14/11	95
Toluene	0.36	0.032	0.57	mg/kg	J	8260B	02/14/11	95
Total Xylenes	18.	0.044	0.34	mg/kg		8260B	02/14/11	95
Surrogate Recovery								
Toluene-d8	112.			% Rec.		8260B	02/14/11	95
Dibromofluoromethane	97.6			% Rec.		8260B	02/14/11	95
4-Bromofluorobenzene	125.			% Rec.		8260B	02/14/11	95

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-05

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-11 16-20 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 13:38

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.			%		2540G	02/18/11	1
Benzene	U	1.5	4.3	mg/kg		8260B	02/13/11	3500
Ethylbenzene	52.	1.1	4.3	mg/kg		8260B	02/13/11	3500
Isopropylbenzene	6.6	1.2	4.3	mg/kg		8260B	02/13/11	3500
Methyl tert-butyl ether	U	1.2	4.3	mg/kg		8260B	02/13/11	3500
Naphthalene	17.	0.98	22.	mg/kg	J	8260B	02/13/11	3500
Toluene	U	1.2	22.	mg/kg		8260B	02/13/11	3500
Total Xylenes	82.	1.6	13.	mg/kg		8260B	02/13/11	3500
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	02/13/11	3500
Dibromofluoromethane	103.			% Rec.		8260B	02/13/11	3500
4-Bromofluorobenzene	111.			% Rec.		8260B	02/13/11	3500

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-06

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-11 20-23 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 13:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	80.			%		2540G	02/18/11	1
Benzene	U	0.21	0.62	mg/kg		8260B	02/13/11	500
Ethylbenzene	6.6	0.16	0.62	mg/kg		8260B	02/13/11	500
Isopropylbenzene	0.90	0.17	0.62	mg/kg		8260B	02/13/11	500
Methyl tert-butyl ether	U	0.18	0.62	mg/kg		8260B	02/13/11	500
Naphthalene	2.5	0.14	3.1	mg/kg	J	8260B	02/13/11	500
Toluene	0.32	0.17	3.1	mg/kg	J	8260B	02/13/11	500
Total Xylenes	21.	0.23	1.9	mg/kg		8260B	02/13/11	500
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/13/11	500
Dibromofluoromethane	104.			% Rec.		8260B	02/13/11	500
4-Bromofluorobenzene	113.			% Rec.		8260B	02/13/11	500

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-07

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-13 8-12 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 14:33

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	79.			%		2540G	02/18/11	1
Benzene	0.071	0.014	0.043	mg/kg		8260B	02/13/11	34
Ethylbenzene	4.6	0.011	0.043	mg/kg		8260B	02/13/11	34
Isopropylbenzene	1.2	0.011	0.043	mg/kg		8260B	02/13/11	34
Methyl tert-butyl ether	U	0.012	0.043	mg/kg		8260B	02/13/11	34
Naphthalene	2.2	0.0095	0.22	mg/kg		8260B	02/13/11	34
Toluene	0.058	0.011	0.22	mg/kg	J	8260B	02/13/11	34
Total Xylenes	20.	0.062	0.52	mg/kg		8260B	02/14/11	136
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/13/11	34
Dibromofluoromethane	94.5			% Rec.		8260B	02/13/11	34
4-Bromofluorobenzene	116.			% Rec.		8260B	02/13/11	34

Results listed are dry weight basis.
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MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-08

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-13 15-16 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 14:40

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.			%		2540G	02/18/11	1
Benzene	U	0.015	0.044	mg/kg		8260B	02/14/11	36
Ethylbenzene	4.2	0.011	0.044	mg/kg		8260B	02/14/11	36
Isopropylbenzene	1.3	0.012	0.044	mg/kg		8260B	02/14/11	36
Methyl tert-butyl ether	U	0.013	0.044	mg/kg		8260B	02/14/11	36
Naphthalene	2.9	0.010	0.22	mg/kg		8260B	02/14/11	36
Toluene	0.093	0.012	0.22	mg/kg	J	8260B	02/14/11	36
Total Xylenes	1.7	0.016	0.13	mg/kg		8260B	02/14/11	36
Surrogate Recovery								
Toluene-d8	130.			% Rec.	J1	8260B	02/14/11	36
Dibromofluoromethane	98.8			% Rec.		8260B	02/14/11	36
4-Bromofluorobenzene	101.			% Rec.		8260B	02/14/11	36

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-10

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-4 10-12 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 15:19

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/18/11	1
Benzene	0.64	0.021	0.060	mg/kg		8260B	02/14/11	50
Ethylbenzene	0.47	0.016	0.060	mg/kg		8260B	02/14/11	50
Isopropylbenzene	0.20	0.017	0.060	mg/kg		8260B	02/14/11	50
Methyl tert-butyl ether	U	0.018	0.060	mg/kg		8260B	02/14/11	50
Naphthalene	0.34	0.014	0.30	mg/kg		8260B	02/14/11	50
Toluene	0.074	0.017	0.30	mg/kg	J	8260B	02/14/11	50
Total Xylenes	0.40	0.023	0.18	mg/kg		8260B	02/14/11	50
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	02/14/11	50
Dibromofluoromethane	98.2			% Rec.		8260B	02/14/11	50
4-Bromofluorobenzene	122.			% Rec.		8260B	02/14/11	50

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18,2011

ESC Sample # : L501413-11

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-4 16-18 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 15:36

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	87.			%		2540G	02/18/11	1
Benzene	0.47	0.016	0.044	mg/kg		8260B	02/12/11	38
Ethylbenzene	0.54	0.012	0.044	mg/kg		8260B	02/12/11	38
Isopropylbenzene	0.17	0.013	0.044	mg/kg		8260B	02/12/11	38
Methyl tert-butyl ether	U	0.014	0.044	mg/kg		8260B	02/12/11	38
Naphthalene	0.069	0.011	0.22	mg/kg	J	8260B	02/12/11	38
Toluene	0.060	0.013	0.22	mg/kg	J	8260B	02/12/11	38
Total Xylenes	0.78	0.017	0.13	mg/kg		8260B	02/12/11	38
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	02/12/11	38
Dibromofluoromethane	95.2			% Rec.		8260B	02/12/11	38
4-Bromofluorobenzene	121.			% Rec.		8260B	02/12/11	38

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18, 2011

ESC Sample # : L501413-12

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-4 20-23 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 15:47

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.			%		2540G	02/18/11	1
Benzene	5.4	1.4	3.9	mg/kg		8260B	02/12/11	3300
Ethylbenzene	42.	1.0	3.9	mg/kg		8260B	02/12/11	3300
Isopropylbenzene	4.4	1.1	3.9	mg/kg		8260B	02/12/11	3300
Methyl tert-butyl ether	U	1.2	3.9	mg/kg		8260B	02/12/11	3300
Naphthalene	12.	0.92	20.	mg/kg	J	8260B	02/12/11	3300
Toluene	2.1	1.1	20.	mg/kg	J	8260B	02/12/11	3300
Total Xylenes	200	1.5	12.	mg/kg		8260B	02/12/11	3300
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	02/12/11	3300
Dibromofluoromethane	98.6			% Rec.		8260B	02/12/11	3300
4-Bromofluorobenzene	110.			% Rec.		8260B	02/12/11	3300

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18, 2011

ESC Sample # : L501413-13

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-4 8-10 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/09/11 15:19

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	6100	10.	mg/kg	USDA LOI	02/17/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 18, 2011

ESC Sample # : L501413-14

Site ID : 03-07315

Project # : ARCH STREET

Date Received : February 11, 2011
Description : Soil

Sample ID : P-6 11-12 FT

Collected By : Sara Giordano
Collection Date : 02/09/11 09:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	6000	10.	mg/kg	USDA LOI	02/17/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 02/18/11 15:46 Printed: 02/18/11 15:47

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L501413-01	WG521272	SAMP	Toluene	R1573689	J
L501413-02	WG521272	SAMP	Benzene	R1573689	J
	WG521272	SAMP	Methyl tert-butyl ether	R1573689	J
	WG521272	SAMP	Toluene	R1573689	J
L501413-03	WG521272	SAMP	Naphthalene	R1573689	J
L501413-04	WG521476	SAMP	Toluene	R1574949	J
L501413-05	WG521272	SAMP	Naphthalene	R1573689	J
L501413-06	WG521272	SAMP	Naphthalene	R1573689	J
	WG521272	SAMP	Toluene	R1573689	J
L501413-07	WG521272	SAMP	Toluene	R1573689	J
L501413-08	WG521476	SAMP	Toluene	R1574949	J
	WG521476	SAMP	Toluene-d8	R1574949	J1
L501413-10	WG521476	SAMP	Toluene	R1574949	J
L501413-11	WG521273	SAMP	Naphthalene	R1573690	J
	WG521273	SAMP	Toluene	R1573690	J
L501413-12	WG521273	SAMP	Naphthalene	R1573690	J
	WG521273	SAMP	Toluene	R1573690	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

E058

Chain of Custody
Page 1 of 2

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/Sate Collected: kITTANNING, pa

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: aRCH sTREET

ESC Key: INSITE-SS

Collected by: sARA gIORDANO

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Sara Giordano

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

Analysis/Container/Preservative

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
P-6 12-14'	Grab	SS		2-9-11	9:30	5	X	X	X		L 501413 01
P-6 20-24'	Grab	SS		2-9-11	9:50	5	X	X	X		02
P-10 8-12'	Grab	SS		2-9-11	10:49	5	X	X	X		03
P-10 12-16'	Grab	SS		2-9-11	11:00	5	X	X	X		04
P-11 16-20'	Grab	SS		2-9-11	13:38	5	X	X	X		05
P-11 20-23'	Grab	SS		2-9-11	13:50	5	X	X	X		06
P-13 8-12'	Grab	SS		2-9-11	14:33	5	X	X	X		07
P-13 15-16'	Grab	SS		2-9-11	14:40	5	X	X	X		08

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: Per Quote INSITE 208115

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ 4341980009075		Condition: (lab use only)
Sara Giordano	2/10/11	4:30pm				OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.5°C	Bottles Received: 57	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Matthew Malone	Date: 2/11/11	Time: 09:00	pH Checked: NCF:

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-SS

Collected by: Sara Giordano

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Sara Giordano

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Chain of Custody Page 2 of 2

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
~~Phone (800) 767-5859~~
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260STARS / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Total Organic Carbon	Remarks/Contaminant	Sample # (lab only)
P-4 10-12'	Grab	SS		2-9-11	15:19	5	X	X	X			L501413-10
P-4 16-18'	Grab	SS		2-9-11	15:36	5	X	X	X			-11-12
P-4 20-23'	Grab	SS		2-9-11	15:47	5	X	X	X			
P-4 8-10'	Grab	SS		2-9-11	15:19	1				X		-12-13
P-6 11-12'	Grab	SS		2-9-11	9:20	1				X		-13-14

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____ pH _____ Temp _____

Remarks: 434198007075 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Sara Giordano	2/10/11	4:30pm		Temp: 2.5° Bottles Received: 57	OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Matthew Markowski	Date: 2/11/11 Time: 0900	pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Wednesday February 23, 2011

Report Number: L501391
Samples Received: 02/11/11
Client Project: ARCH STREET

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-01

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-3 11-12 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 09:34

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.			%		2540G	02/17/11	1
Benzene	0.96	0.21	0.60	mg/kg		8260B	02/22/11	500
Ethylbenzene	20.	1.6	6.0	mg/kg		8260B	02/12/11	5000
Isopropylbenzene	3.9	1.7	6.0	mg/kg	J	8260B	02/12/11	5000
Methyl tert-butyl ether	U	0.18	0.60	mg/kg		8260B	02/22/11	500
Naphthalene	12.	1.4	30.	mg/kg	J	8260B	02/12/11	5000
Toluene	6.2	1.7	30.	mg/kg	J	8260B	02/12/11	5000
Total Xylenes	62.	2.3	18.	mg/kg		8260B	02/12/11	5000
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	02/12/11	5000
Dibromofluoromethane	109.			% Rec.		8260B	02/12/11	5000
4-Bromofluorobenzene	109.			% Rec.		8260B	02/12/11	5000

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-02

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-3 16-17.5 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 09:41

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.			%		2540G	02/17/11	1
Benzene	0.98	0.21	0.61	mg/kg		8260B	02/12/11	500
Ethylbenzene	13.	0.16	0.61	mg/kg		8260B	02/12/11	500
Isopropylbenzene	2.1	0.17	0.61	mg/kg		8260B	02/12/11	500
Methyl tert-butyl ether	U	0.18	0.61	mg/kg		8260B	02/12/11	500
Naphthalene	7.4	0.14	3.0	mg/kg		8260B	02/12/11	500
Toluene	0.58	0.17	3.0	mg/kg	J	8260B	02/12/11	500
Total Xylenes	64.	0.23	1.8	mg/kg		8260B	02/12/11	500
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	02/12/11	500
Dibromofluoromethane	105.			% Rec.		8260B	02/12/11	500
4-Bromofluorobenzene	116.			% Rec.		8260B	02/12/11	500

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-03

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-3 19.5-20 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 09:41

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	91.			%		2540G	02/17/11	1
Benzene	0.0025	0.0021	0.0055	mg/kg	J	8260B	02/12/11	5
Ethylbenzene	U	0.0016	0.0055	mg/kg		8260B	02/12/11	5
Isopropylbenzene	U	0.0017	0.0055	mg/kg		8260B	02/12/11	5
Methyl tert-butyl ether	U	0.0018	0.0055	mg/kg		8260B	02/12/11	5
Naphthalene	U	0.0014	0.027	mg/kg		8260B	02/12/11	5
Toluene	U	0.0017	0.027	mg/kg		8260B	02/12/11	5
Total Xylenes	0.0028	0.0023	0.016	mg/kg	J	8260B	02/12/11	5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	02/12/11	5
Dibromofluoromethane	115.			% Rec.		8260B	02/12/11	5
4-Bromofluorobenzene	108.			% Rec.		8260B	02/12/11	5

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23, 2011

ESC Sample # : L501391-04

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-7 10-12 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 11:01

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.			%		2540G	02/17/11	1
Benzene	U	0.0021	0.0060	mg/kg		8260B	02/13/11	5
Ethylbenzene	U	0.0016	0.0060	mg/kg		8260B	02/13/11	5
Isopropylbenzene	U	0.0017	0.0060	mg/kg		8260B	02/13/11	5
Methyl tert-butyl ether	U	0.0018	0.0060	mg/kg		8260B	02/13/11	5
Naphthalene	U	0.0014	0.030	mg/kg		8260B	02/13/11	5
Toluene	U	0.0017	0.030	mg/kg		8260B	02/13/11	5
Total Xylenes	U	0.0023	0.018	mg/kg		8260B	02/13/11	5
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/13/11	5
Dibromofluoromethane	108.			% Rec.		8260B	02/13/11	5
4-Bromofluorobenzene	111.			% Rec.		8260B	02/13/11	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-05

Site ID : 03-07315

Project # : ARCH STREET

Date Received : February 11, 2011
Description : Soil

Sample ID : P-7 10-12 FT

Collected By : Sara Giordano
Collection Date : 02/10/11 11:01

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TOC (Total Organic Carbon)	4600	10.	mg/kg	USDA LOI	02/17/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
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February 23,2011

ESC Sample # : L501391-06

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-7 12-16 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 11:11

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	86.			%		2540G	02/17/11	1
Benzene	0.15	0.021	0.058	mg/kg		8260B	02/15/11	50
Ethylbenzene	1.8	0.016	0.058	mg/kg		8260B	02/15/11	50
Isopropylbenzene	2.6	0.017	0.058	mg/kg		8260B	02/15/11	50
Methyl tert-butyl ether	U	0.018	0.058	mg/kg		8260B	02/15/11	50
Naphthalene	3.4	0.014	0.29	mg/kg		8260B	02/15/11	50
Toluene	0.18	0.017	0.29	mg/kg	J	8260B	02/15/11	50
Total Xylenes	3.5	0.023	0.17	mg/kg		8260B	02/15/11	50
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	02/15/11	50
Dibromofluoromethane	88.4			% Rec.		8260B	02/15/11	50
4-Bromofluorobenzene	120.			% Rec.		8260B	02/15/11	50

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-07

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-7 17.5-19.5 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 11:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.			%		2540G	02/17/11	1
Benzene	0.0059	0.0021	0.0061	mg/kg	J	8260B	02/13/11	5
Ethylbenzene	0.0068	0.0016	0.0061	mg/kg		8260B	02/13/11	5
Isopropylbenzene	0.0026	0.0017	0.0061	mg/kg	J	8260B	02/13/11	5
Methyl tert-butyl ether	0.12	0.0018	0.0061	mg/kg		8260B	02/13/11	5
Naphthalene	0.012	0.0014	0.031	mg/kg	J	8260B	02/13/11	5
Toluene	U	0.0017	0.031	mg/kg		8260B	02/13/11	5
Total Xylenes	0.0084	0.0023	0.018	mg/kg	J	8260B	02/13/11	5
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	02/13/11	5
Dibromofluoromethane	108.			% Rec.		8260B	02/13/11	5
4-Bromofluorobenzene	112.			% Rec.		8260B	02/13/11	5

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-08

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-8 10-12 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 10:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.			%		2540G	02/18/11	1
Benzene	0.0039	0.0021	0.0060	mg/kg	J	8260B	02/14/11	5
Ethylbenzene	U	0.0016	0.0060	mg/kg		8260B	02/14/11	5
Isopropylbenzene	0.0025	0.0017	0.0060	mg/kg	J	8260B	02/14/11	5
Methyl tert-butyl ether	U	0.0018	0.0060	mg/kg		8260B	02/14/11	5
Naphthalene	0.020	0.0014	0.030	mg/kg	J	8260B	02/14/11	5
Toluene	U	0.0017	0.030	mg/kg		8260B	02/14/11	5
Total Xylenes	U	0.0023	0.018	mg/kg		8260B	02/14/11	5
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	02/14/11	5
Dibromofluoromethane	99.5			% Rec.		8260B	02/14/11	5
4-Bromofluorobenzene	111.			% Rec.		8260B	02/14/11	5

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 23,2011

ESC Sample # : L501391-09

Date Received : February 11, 2011
Description : Soil

Site ID : 03-07315

Sample ID : P-8 12-16 FT

Project # : ARCH STREET

Collected By : Sara Giordano
Collection Date : 02/10/11 10:18

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.			%		2540G	02/18/11	1
Benzene	0.23	0.021	0.060	mg/kg		8260B	02/14/11	50
Ethylbenzene	7.4	0.016	0.060	mg/kg		8260B	02/14/11	50
Isopropylbenzene	2.4	0.017	0.060	mg/kg		8260B	02/14/11	50
Methyl tert-butyl ether	U	0.018	0.060	mg/kg		8260B	02/14/11	50
Naphthalene	6.8	0.014	0.30	mg/kg		8260B	02/14/11	50
Toluene	0.14	0.017	0.30	mg/kg	J	8260B	02/14/11	50
Total Xylenes	12.	0.023	0.18	mg/kg		8260B	02/14/11	50
Surrogate Recovery								
Toluene-d8	115.			% Rec.		8260B	02/14/11	50
Dibromofluoromethane	97.2			% Rec.		8260B	02/14/11	50
4-Bromofluorobenzene	137.			% Rec.		8260B	02/14/11	50

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L501391-01	WG521272	SAMP	Isopropylbenzene	R1573689	J
	WG521272	SAMP	Naphthalene	R1573689	J
	WG521272	SAMP	Toluene	R1573689	J
L501391-02	WG521272	SAMP	Toluene	R1573689	J
L501391-03	WG521272	SAMP	Benzene	R1573689	J
	WG521272	SAMP	Total Xylenes	R1573689	J
L501391-06	WG521573	SAMP	Toluene	R1575850	J
L501391-07	WG521272	SAMP	Benzene	R1573689	J
	WG521272	SAMP	Isopropylbenzene	R1573689	J
	WG521272	SAMP	Naphthalene	R1573689	J
	WG521272	SAMP	Total Xylenes	R1573689	J
L501391-08	WG521476	SAMP	Benzene	R1574949	J
	WG521476	SAMP	Isopropylbenzene	R1574949	J
	WG521476	SAMP	Naphthalene	R1574949	J
L501391-09	WG521476	SAMP	Toluene	R1574949	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-SS

Collected by: Sara giordano

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Sara Giordano

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

A067

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres		Total Organic Carbon			Remarks/Contaminant	Sample # (lab only)
P-3 11-12'	Grab	SS		2-10-11	9:34	5	X	X	X						L501391-01
P-3 16 19.5'	Grab	SS		2-10-11	9:41	5	X	X	X						02
P-3 19.5-20'	Grab	SS		2-10-11	9:41	4	X	X	X						03
P-7 10-12'	Grab	SS		2-10-11	11:01	5	X	X	X		X				04/05
P-7 12-16'	Grab	SS		2-10-11	11:11	5	X	X	X						06
P-7 17.5-19.5'	Grab	SS		2-10-11	11:20	5	X	X	X						07
P-8 10-12'	Grab	SS		2-10-11	10:10	5	X	X	X						08
P-8 12-16'	Grab	SS		2-10-11	10:18	5	X	X	X						09

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: Per Quote INSITE 20911 5

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Sara Giordano	2/10/11	4:30 PM	4341 9800 8830		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1° / Bottles Received: 39	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-11-11 / Time: 0900	pH Checked: / NCF:

Chain of Custody
Page 1 of 1

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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday June 14, 2012

Report Number: L579411
Samples Received: 06/08/12
Client Project: ARCH

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579411-01

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-2S 10-12FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 11:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	85.2	0.0330	0.100	%		2540G	06/13/12	1
Benzene	2.2	0.14	0.48	mg/kg		8260B	06/09/12	410
Ethylbenzene	21.	0.15	0.48	mg/kg		8260B	06/09/12	410
Isopropylbenzene	3.8	0.13	0.48	mg/kg		8260B	06/09/12	410
Methyl tert-butyl ether	U	0.13	0.48	mg/kg		8260B	06/09/12	410
Naphthalene	9.0	0.23	2.4	mg/kg		8260B	06/09/12	410
Toluene	1.2	0.13	2.4	mg/kg	J	8260B	06/09/12	410
Total Xylenes	50.	0.19	1.4	mg/kg		8260B	06/09/12	410
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	06/09/12	410
Dibromofluoromethane	101.			% Rec.		8260B	06/09/12	410
4-Bromofluorobenzene	105.			% Rec.		8260B	06/09/12	410

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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Reported: 06/14/12 16:23 Printed: 06/14/12 16:23

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579411-02

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-2S 12-14FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 11:12

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.7	0.0330	0.100	%		2540G	06/13/12	1
Benzene	4.2	0.28	0.98	mg/kg		8260B	06/13/12	830
Ethylbenzene	79.	0.31	0.98	mg/kg		8260B	06/13/12	830
Isopropylbenzene	8.5	0.26	0.98	mg/kg		8260B	06/13/12	830
Methyl tert-butyl ether	U	0.27	0.98	mg/kg		8260B	06/13/12	830
Naphthalene	27.	0.46	4.9	mg/kg		8260B	06/13/12	830
Toluene	48.	0.26	4.9	mg/kg		8260B	06/13/12	830
Total Xylenes	420	0.38	2.9	mg/kg		8260B	06/13/12	830
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/13/12	830
Dibromofluoromethane	96.6			% Rec.		8260B	06/13/12	830
4-Bromofluorobenzene	96.1			% Rec.		8260B	06/13/12	830

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579411-03

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-2S 15-17FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 11:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.2	0.0330	0.100	%		2540G	06/13/12	1
Benzene	8.5	0.28	1.0	mg/kg		8260B	06/13/12	820
Ethylbenzene	38.	0.31	1.0	mg/kg		8260B	06/13/12	820
Isopropylbenzene	3.0	0.26	1.0	mg/kg		8260B	06/13/12	820
Methyl tert-butyl ether	U	0.26	1.0	mg/kg		8260B	06/13/12	820
Naphthalene	12.	0.45	5.0	mg/kg		8260B	06/13/12	820
Toluene	69.	0.26	5.0	mg/kg		8260B	06/13/12	820
Total Xylenes	190	0.38	3.0	mg/kg		8260B	06/13/12	820
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/13/12	820
Dibromofluoromethane	95.5			% Rec.		8260B	06/13/12	820
4-Bromofluorobenzene	95.7			% Rec.		8260B	06/13/12	820

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579411-04

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-4S 10-12.5FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 10:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.7	0.0330	0.100	%		2540G	06/13/12	1
Benzene	3.3	0.24	0.84	mg/kg		8260B	06/13/12	710
Ethylbenzene	35.	0.26	0.84	mg/kg		8260B	06/13/12	710
Isopropylbenzene	5.8	0.22	0.84	mg/kg		8260B	06/13/12	710
Methyl tert-butyl ether	U	0.23	0.84	mg/kg		8260B	06/13/12	710
Naphthalene	13.	0.39	4.2	mg/kg		8260B	06/13/12	710
Toluene	2.0	0.22	4.2	mg/kg	J	8260B	06/13/12	710
Total Xylenes	62.	0.33	2.5	mg/kg		8260B	06/13/12	710
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/13/12	710
Dibromofluoromethane	94.4			% Rec.		8260B	06/13/12	710
4-Bromofluorobenzene	101.			% Rec.		8260B	06/13/12	710

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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Reported: 06/14/12 16:23 Printed: 06/14/12 16:23

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579411-05

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-4S 12.5-15FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 10:05

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.5	0.0330	0.100	%		2540G	06/13/12	1
Benzene	5.2	0.15	0.51	mg/kg		8260B	06/09/12	430
Ethylbenzene	74.	0.16	0.51	mg/kg		8260B	06/09/12	430
Isopropylbenzene	8.9	0.14	0.51	mg/kg		8260B	06/09/12	430
Methyl tert-butyl ether	U	0.14	0.51	mg/kg		8260B	06/09/12	430
Naphthalene	31.	0.24	2.5	mg/kg		8260B	06/09/12	430
Toluene	11.	0.13	2.5	mg/kg		8260B	06/09/12	430
Total Xylenes	700	9.9	76.	mg/kg		8260B	06/13/12	21500
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/09/12	430
Dibromofluoromethane	103.			% Rec.		8260B	06/09/12	430
4-Bromofluorobenzene	95.2			% Rec.		8260B	06/09/12	430

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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The reported analytical results relate only to the sample submitted
Reported: 06/14/12 16:23 Printed: 06/14/12 16:23

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579411-06

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-4S 15-17FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 10:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	79.7	0.0330	0.100	%		2540G	06/13/12	1
Benzene	2.0	0.11	0.41	mg/kg		8260B	06/09/12	325
Ethylbenzene	5.1	0.12	0.41	mg/kg		8260B	06/09/12	325
Isopropylbenzene	0.51	0.10	0.41	mg/kg		8260B	06/09/12	325
Methyl tert-butyl ether	U	0.10	0.41	mg/kg		8260B	06/09/12	325
Naphthalene	2.5	0.18	2.0	mg/kg		8260B	06/09/12	325
Toluene	8.5	0.10	2.0	mg/kg		8260B	06/09/12	325
Total Xylenes	21.	0.15	1.2	mg/kg		8260B	06/09/12	325
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/09/12	325
Dibromofluoromethane	103.			% Rec.		8260B	06/09/12	325
4-Bromofluorobenzene	104.			% Rec.		8260B	06/09/12	325

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 06/14/12 16:23 Printed: 06/14/12 16:23

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L579411-01	WG597007	SAMP	Toluene	R2207414	J
L579411-04	WG597537	SAMP	Toluene	R2208037	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH

ESC Key: INSITE-SS

Collected by: JS/PR

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservati

J169

Chain of Custody Page 1 of 1

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CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres					Remarks/Contaminant	Sample # (lab only)
PT-2S	Grab	SS	10-12'	06/05/12	1110	5	X	X	X						L579411-01
PT-2S	Grab	SS	12-14'	06/05/12	1112	5	X	X	X						-02
PT-2S	Grab	SS	15-17'	06/05/12	1115	5	X	X	X						-03
PT-4S	Grab	SS	10-12.5'	06/05/12	1000	5	X	X	X						-04
PT-4S	Grab	SS	12.5-15'	06/05/12	1005	5	X	X	X						-05
PT-4S	Grab	SS	15-17	06/05/12	1010	5	X	X	X						-06

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____ pH _____ Temp _____

Remarks: 508658273751 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐UPS ☑FedEx ☐Courier ☐_____	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.8 / Bottles Received: 30	COC'S OK
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6-8-12 / Time: 0900	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Wednesday June 13, 2012

Report Number: L579404
Samples Received: 06/08/12
Client Project: ARCH

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-01

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-8N 10-12.5FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 15:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.2	0.0330	0.100	%		2540G	06/13/12	1
Benzene	2.4	1.7	5.9	mg/kg	J	8260B	06/09/12	4900
Ethylbenzene	62.	1.8	5.9	mg/kg		8260B	06/09/12	4900
Isopropylbenzene	7.3	1.5	5.9	mg/kg		8260B	06/09/12	4900
Methyl tert-butyl ether	U	1.6	5.9	mg/kg		8260B	06/09/12	4900
Naphthalene	25.	2.7	29.	mg/kg	J	8260B	06/09/12	4900
Toluene	3.2	1.5	29.	mg/kg	J	8260B	06/09/12	4900
Total Xylenes	120	2.2	18.	mg/kg		8260B	06/09/12	4900
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/09/12	4900
Dibromofluoromethane	97.3			% Rec.		8260B	06/09/12	4900
4-Bromofluorobenzene	99.6			% Rec.		8260B	06/09/12	4900

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-02

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-8N 12.5-15FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 15:32

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.0	0.0330	0.100	%		2540G	06/13/12	1
Benzene	U	1.4	4.9	mg/kg		8260B	06/09/12	4050
Ethylbenzene	53.	1.5	4.9	mg/kg		8260B	06/09/12	4050
Isopropylbenzene	6.9	1.3	4.9	mg/kg		8260B	06/09/12	4050
Methyl tert-butyl ether	U	1.3	4.9	mg/kg		8260B	06/09/12	4050
Naphthalene	26.	2.2	24.	mg/kg		8260B	06/09/12	4050
Toluene	5.1	1.3	24.	mg/kg	J	8260B	06/09/12	4050
Total Xylenes	190	1.9	15.	mg/kg		8260B	06/09/12	4050
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	06/09/12	4050
Dibromofluoromethane	98.2			% Rec.		8260B	06/09/12	4050
4-Bromofluorobenzene	102.			% Rec.		8260B	06/09/12	4050

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-03

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-8N 15-16FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 15:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.6	0.0330	0.100	%		2540G	06/13/12	1
Benzene	0.58	0.016	0.056	mg/kg		8260B	06/09/12	46
Ethylbenzene	15.	0.069	0.22	mg/kg		8260B	06/11/12	184
Isopropylbenzene	1.3	0.014	0.056	mg/kg		8260B	06/09/12	46
Methyl tert-butyl ether	U	0.015	0.056	mg/kg		8260B	06/09/12	46
Naphthalene	4.8	0.025	0.28	mg/kg		8260B	06/09/12	46
Toluene	2.0	0.014	0.28	mg/kg		8260B	06/09/12	46
Total Xylenes	58.	0.085	0.68	mg/kg		8260B	06/11/12	184
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	06/09/12	46
Dibromofluoromethane	98.5			% Rec.		8260B	06/09/12	46
4-Bromofluorobenzene	115.			% Rec.		8260B	06/09/12	46

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-04

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-4N 10-11.5FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 08:55

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.7	0.0330	0.100	%		2540G	06/13/12	1
Benzene	4.7	1.3	4.6	mg/kg		8260B	06/09/12	3850
Ethylbenzene	54.	1.4	4.6	mg/kg		8260B	06/09/12	3850
Isopropylbenzene	7.2	1.2	4.6	mg/kg		8260B	06/09/12	3850
Methyl tert-butyl ether	U	1.2	4.6	mg/kg		8260B	06/09/12	3850
Naphthalene	28.	2.1	23.	mg/kg		8260B	06/09/12	3850
Toluene	3.1	1.2	23.	mg/kg	J	8260B	06/09/12	3850
Total Xylenes	94.	1.8	14.	mg/kg		8260B	06/09/12	3850
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	06/09/12	3850
Dibromofluoromethane	100.			% Rec.		8260B	06/09/12	3850
4-Bromofluorobenzene	97.9			% Rec.		8260B	06/09/12	3850

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-05

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-4N 15-16FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 09:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	79.4	0.0330	0.100	%		2540G	06/13/12	1
Benzene	0.83	0.15	0.56	mg/kg		8260B	06/09/12	445
Ethylbenzene	3.3	0.17	0.56	mg/kg		8260B	06/09/12	445
Isopropylbenzene	0.29	0.14	0.56	mg/kg	J	8260B	06/09/12	445
Methyl tert-butyl ether	U	0.14	0.56	mg/kg		8260B	06/09/12	445
Naphthalene	2.6	0.25	2.8	mg/kg	J	8260B	06/09/12	445
Toluene	1.2	0.14	2.8	mg/kg	J	8260B	06/09/12	445
Total Xylenes	12.	0.20	1.7	mg/kg		8260B	06/09/12	445
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/09/12	445
Dibromofluoromethane	98.6			% Rec.		8260B	06/09/12	445
4-Bromofluorobenzene	100.			% Rec.		8260B	06/09/12	445

Results listed are dry weight basis.
U = ND (Not Detected)
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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-06

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : IP-1 10-12.7FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 12:26

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.7	0.0330	0.100	%		2540G	06/13/12	1
Benzene	1.9	0.13	0.45	mg/kg		8260B	06/09/12	375
Ethylbenzene	98.	0.28	0.90	mg/kg		8260B	06/11/12	750
Isopropylbenzene	8.7	0.12	0.45	mg/kg		8260B	06/09/12	375
Methyl tert-butyl ether	U	0.12	0.45	mg/kg		8260B	06/09/12	375
Naphthalene	27.	0.21	2.2	mg/kg		8260B	06/09/12	375
Toluene	2.0	0.12	2.2	mg/kg	J	8260B	06/09/12	375
Total Xylenes	320	0.34	2.7	mg/kg		8260B	06/11/12	750
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/09/12	375
Dibromofluoromethane	100.			% Rec.		8260B	06/09/12	375
4-Bromofluorobenzene	96.3			% Rec.		8260B	06/09/12	375

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 13,2012

ESC Sample # : L579404-07

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : IP-1 15-17.5FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 12:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.5	0.0330	0.100	%		2540G	06/13/12	1
Benzene	8.7	0.13	0.48	mg/kg		8260B	06/09/12	395
Ethylbenzene	53.	0.15	0.48	mg/kg		8260B	06/09/12	395
Isopropylbenzene	5.8	0.12	0.48	mg/kg		8260B	06/09/12	395
Methyl tert-butyl ether	U	0.13	0.48	mg/kg		8260B	06/09/12	395
Naphthalene	17.	0.22	2.4	mg/kg		8260B	06/09/12	395
Toluene	36.	0.12	2.4	mg/kg		8260B	06/09/12	395
Total Xylenes	270	0.36	2.9	mg/kg		8260B	06/11/12	790
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/09/12	395
Dibromofluoromethane	98.7			% Rec.		8260B	06/09/12	395
4-Bromofluorobenzene	102.			% Rec.		8260B	06/09/12	395

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L579404-01	WG597002	SAMP	Benzene	R2204813	J
	WG597002	SAMP	Naphthalene	R2204813	J
	WG597002	SAMP	Toluene	R2204813	J
L579404-02	WG597002	SAMP	Toluene	R2204813	J
L579404-04	WG597002	SAMP	Toluene	R2204813	J
L579404-05	WG597002	SAMP	Isopropylbenzene	R2204813	J
	WG597002	SAMP	Naphthalene	R2204813	J
	WG597002	SAMP	Toluene	R2204813	J
L579404-06	WG597002	SAMP	Toluene	R2204813	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

H080

Chain of Custody Page 1 of 1

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
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Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH

ESC Key: INSITE-SS

Collected by: JS/PR

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Paul Rogers

Packed on Ice N Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres						Remarks/Contaminant	Sample # (lab only)
PT-8N	Grab	SS	10-12.5	06/05/12	1530	5	X	X	X							L579404-01
PT-8N	Grab	SS	12.5-15	06/05/12	1532	5	X	X	X							-02
PT-8N	Grab	SS	15-16	06/05/12	1535	5	X	X	X							-03
PT-4N	Grab	SS	10-11.5	06/06/12	855	5	X	X	X							-04
PT-4N	Grab	SS	15-16	06/06/12	900	5	X	X	X							-05
IP-1	Grab	SS	10-12.7	06/05/12	1226	5	X	X	X							-06
IP-1	Grab	SS	15-17.5	06/05/12	1230	5	X	X	X							-07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks:

5006582732591 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐		Condition: CJ (lab use only)
[signature]	6-7-12	17:30				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 5.7	Bottles Received: 35	COCSI (OK)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6/8/12	Time: 0900	pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday June 14, 2012

Report Number: L579413
Samples Received: 06/08/12
Client Project: ARCH

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579413-01

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-8S 10-10.5FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 09:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.8	0.0330	0.100	%		2540G	06/13/12	1
Benzene	0.35	0.14	0.49	mg/kg	J	8260B	06/09/12	410
Ethylbenzene	6.9	0.15	0.49	mg/kg		8260B	06/09/12	410
Isopropylbenzene	2.3	0.13	0.49	mg/kg		8260B	06/09/12	410
Methyl tert-butyl ether	U	0.13	0.49	mg/kg		8260B	06/09/12	410
Naphthalene	3.5	0.23	2.4	mg/kg		8260B	06/09/12	410
Toluene	0.43	0.13	2.4	mg/kg	J	8260B	06/09/12	410
Total Xylenes	2.0	0.19	1.5	mg/kg		8260B	06/09/12	410
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/09/12	410
Dibromofluoromethane	101.			% Rec.		8260B	06/09/12	410
4-Bromofluorobenzene	102.			% Rec.		8260B	06/09/12	410

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579413-02

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-8S 12.5-15FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 09:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.5	0.0330	0.100	%		2540G	06/13/12	1
Benzene	0.26	0.12	0.43	mg/kg	J	8260B	06/09/12	365
Ethylbenzene	11.	0.14	0.43	mg/kg		8260B	06/09/12	365
Isopropylbenzene	2.1	0.11	0.43	mg/kg		8260B	06/09/12	365
Methyl tert-butyl ether	U	0.12	0.43	mg/kg		8260B	06/09/12	365
Naphthalene	5.4	0.20	2.2	mg/kg		8260B	06/09/12	365
Toluene	0.28	0.11	2.2	mg/kg	J	8260B	06/09/12	365
Total Xylenes	14.	0.17	1.3	mg/kg		8260B	06/09/12	365
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	06/09/12	365
Dibromofluoromethane	104.			% Rec.		8260B	06/09/12	365
4-Bromofluorobenzene	102.			% Rec.		8260B	06/09/12	365

Results listed are dry weight basis.
U = ND (Not Detected)
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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579413-03

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : PT-8S 15-17FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 09:25

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.2	0.0330	0.100	%		2540G	06/13/12	1
Benzene	0.52	0.17	0.60	mg/kg	J	8260B	06/12/12	500
Ethylbenzene	12.	0.19	0.60	mg/kg		8260B	06/12/12	500
Isopropylbenzene	1.3	0.16	0.60	mg/kg		8260B	06/12/12	500
Methyl tert-butyl ether	U	0.16	0.60	mg/kg		8260B	06/12/12	500
Naphthalene	4.6	0.28	3.0	mg/kg		8260B	06/12/12	500
Toluene	37.	0.16	3.0	mg/kg		8260B	06/12/12	500
Total Xylenes	70.	0.23	1.8	mg/kg		8260B	06/12/12	500
Surrogate Recovery								
Toluene-d8	92.7			% Rec.		8260B	06/12/12	500
Dibromofluoromethane	89.8			% Rec.		8260B	06/12/12	500
4-Bromofluorobenzene	117.			% Rec.		8260B	06/12/12	500

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579413-04

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : MW-8 10-13.3FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/05/12 15:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.3	0.0330	0.100	%		2540G	06/13/12	1
Benzene	U	0.17	0.60	mg/kg		8260B	06/12/12	500
Ethylbenzene	7.6	0.19	0.60	mg/kg		8260B	06/12/12	500
Isopropylbenzene	1.6	0.16	0.60	mg/kg		8260B	06/12/12	500
Methyl tert-butyl ether	U	0.16	0.60	mg/kg		8260B	06/12/12	500
Naphthalene	4.0	0.28	3.0	mg/kg		8260B	06/12/12	500
Toluene	0.32	0.16	3.0	mg/kg	J	8260B	06/12/12	500
Total Xylenes	20.	0.23	1.8	mg/kg		8260B	06/12/12	500
Surrogate Recovery								
Toluene-d8	94.1			% Rec.		8260B	06/12/12	500
Dibromofluoromethane	89.2			% Rec.		8260B	06/12/12	500
4-Bromofluorobenzene	112.			% Rec.		8260B	06/12/12	500

Results listed are dry weight basis.
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MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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611 S. Irvine Avenue
Sharon, PA 16146-1165

June 14,2012

ESC Sample # : L579413-05

Date Received : June 08, 2012
Description : Soil

Site ID : 03-07315

Sample ID : MW-9 10-12.6FT

Project # : ARCH

Collected By : JS/PR
Collection Date : 06/07/12 10:17

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.2	0.0330	0.100	%		2540G	06/13/12	1
Benzene	0.78	0.014	0.049	mg/kg		8260B	06/13/12	41
Ethylbenzene	0.071	0.00037	0.0012	mg/kg		8260B	06/09/12	1
Isopropylbenzene	0.053	0.00031	0.0012	mg/kg		8260B	06/09/12	1
Methyl tert-butyl ether	U	0.00032	0.0012	mg/kg		8260B	06/09/12	1
Naphthalene	0.021	0.00055	0.0059	mg/kg		8260B	06/09/12	1
Toluene	0.037	0.00031	0.0059	mg/kg		8260B	06/09/12	1
Total Xylenes	0.10	0.00046	0.0036	mg/kg		8260B	06/09/12	1
Surrogate Recovery								
Toluene-d8	126.			% Rec.	J1	8260B	06/09/12	1
Dibromofluoromethane	137.			% Rec.		8260B	06/09/12	1
4-Bromofluorobenzene	76.2			% Rec.		8260B	06/09/12	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L579413-01	WG597007	SAMP	Benzene	R2207414	J
	WG597007	SAMP	Toluene	R2207414	J
L579413-02	WG597007	SAMP	Benzene	R2207414	J
	WG597007	SAMP	Toluene	R2207414	J
L579413-03	WG597106	SAMP	Benzene	R2207833	J
L579413-04	WG597106	SAMP	Toluene	R2207833	J
L579413-05	WG597007	SAMP	Toluene-d8	R2207414	J1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH

ESC Key: INSITE-SS

Collected by: JS/PR

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Paul Rogers

Packed on Ice: N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
PT-8S	Grab	SS	10-12.5	06/05/12	915	5	X	X	X		L579413-01
PT-8S	Grab	SS	12.5-15	06/05/12	920	5	X	X	X		02
PT-8S	Grab	SS	15-17	06/05/12	925	5	X	X	X		03
MW-8	Grab	SS	10-13.3	06/06/12	1510	5	X	X	X		04
MW-9	Grab	SS	10-12.6	06/08/12	1017	5	X	X	X		05

Chain of Custody Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Phone (615) 758-5858
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F241

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other

5086 5877 83730

pH ____ Temp ____

Flow ____ Other ____

Remarks:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Kelly Kelly	6-7-12	17:30			JR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2°C / Bottles Received: 25	COC SI
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6-8-12 / Time: 09:00	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Tuesday July 17, 2012

Report Number: L584678
Samples Received: 07/12/12
Client Project: ARCH ST

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-01

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-8S 10-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.0	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.58	0.29	1.0	mg/kg	J	8260B	07/13/12	850
Ethylbenzene	18.	0.32	1.0	mg/kg		8260B	07/13/12	850
Isopropylbenzene	7.4	0.27	1.0	mg/kg		8260B	07/13/12	850
Methyl tert-butyl ether	U	0.27	1.0	mg/kg		8260B	07/13/12	850
Naphthalene	15.	0.47	5.0	mg/kg		8260B	07/13/12	850
Toluene	0.75	0.26	5.0	mg/kg	J	8260B	07/13/12	850
Total Xylenes	7.1	0.39	3.0	mg/kg		8260B	07/13/12	850
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	07/13/12	850
Dibromofluoromethane	92.9			% Rec.		8260B	07/13/12	850
4-Bromofluorobenzene	98.8			% Rec.		8260B	07/13/12	850

Results listed are dry weight basis.
U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-02

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-8S 12-14FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:21

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.6	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.6	0.65	2.2	mg/kg	J	8260B	07/13/12	1900
Ethylbenzene	77.	0.71	2.2	mg/kg		8260B	07/13/12	1900
Isopropylbenzene	16.	0.60	2.2	mg/kg		8260B	07/13/12	1900
Methyl tert-butyl ether	U	0.61	2.2	mg/kg		8260B	07/13/12	1900
Naphthalene	34.	1.0	11.	mg/kg		8260B	07/13/12	1900
Toluene	2.0	0.59	11.	mg/kg	J	8260B	07/13/12	1900
Total Xylenes	76.	0.87	6.7	mg/kg		8260B	07/13/12	1900
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	07/13/12	1900
Dibromofluoromethane	98.3			% Rec.		8260B	07/13/12	1900
4-Bromofluorobenzene	101.			% Rec.		8260B	07/13/12	1900

Results listed are dry weight basis.
U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-03

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-8S 15-17FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:25

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	77.7	0.0330	0.100	%		2540G	07/17/12	1
Benzene	8.0	1.5	5.5	mg/kg		8260B	07/13/12	4300
Ethylbenzene	94.	1.6	5.5	mg/kg		8260B	07/13/12	4300
Isopropylbenzene	11.	1.4	5.5	mg/kg		8260B	07/13/12	4300
Methyl tert-butyl ether	U	1.4	5.5	mg/kg		8260B	07/13/12	4300
Naphthalene	33.	2.4	28.	mg/kg		8260B	07/13/12	4300
Toluene	200	1.3	28.	mg/kg		8260B	07/13/12	4300
Total Xylenes	420	2.0	17.	mg/kg		8260B	07/13/12	4300
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/13/12	4300
Dibromofluoromethane	103.			% Rec.		8260B	07/13/12	4300
4-Bromofluorobenzene	102.			% Rec.		8260B	07/13/12	4300

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-04

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-4S 10-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:45

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.6	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.99	0.26	0.90	mg/kg		8260B	07/13/12	750
Ethylbenzene	3.7	0.28	0.90	mg/kg		8260B	07/13/12	750
Isopropylbenzene	1.1	0.24	0.90	mg/kg		8260B	07/13/12	750
Methyl tert-butyl ether	U	0.24	0.90	mg/kg		8260B	07/13/12	750
Naphthalene	2.2	0.42	4.5	mg/kg	J	8260B	07/13/12	750
Toluene	0.31	0.23	4.5	mg/kg	J	8260B	07/13/12	750
Total Xylenes	5.1	0.34	2.7	mg/kg		8260B	07/13/12	750
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	07/13/12	750
Dibromofluoromethane	97.1			% Rec.		8260B	07/13/12	750
4-Bromofluorobenzene	107.			% Rec.		8260B	07/13/12	750

Results listed are dry weight basis.
U = ND (Not Detected)
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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-05

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-4S 12-14FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:46

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.9	0.0330	0.100	%		2540G	07/17/12	1
Benzene	8.6	1.4	4.8	mg/kg		8260B	07/13/12	4000
Ethylbenzene	120	1.5	4.8	mg/kg		8260B	07/13/12	4000
Isopropylbenzene	15.	1.2	4.8	mg/kg		8260B	07/13/12	4000
Methyl tert-butyl ether	U	1.3	4.8	mg/kg		8260B	07/13/12	4000
Naphthalene	45.	2.2	24.	mg/kg		8260B	07/13/12	4000
Toluene	5.0	1.2	24.	mg/kg	J	8260B	07/13/12	4000
Total Xylenes	490	1.8	14.	mg/kg		8260B	07/13/12	4000
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	07/13/12	4000
Dibromofluoromethane	96.3			% Rec.		8260B	07/13/12	4000
4-Bromofluorobenzene	98.5			% Rec.		8260B	07/13/12	4000

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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Reported: 07/17/12 14:43 Printed: 07/17/12 14:44

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-06

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-4S 15-17FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.0	0.0330	0.100	%		2540G	07/17/12	1
Benzene	17.	0.75	2.7	mg/kg		8260B	07/16/12	2200
Ethylbenzene	140	0.82	2.7	mg/kg		8260B	07/16/12	2200
Isopropylbenzene	16.	0.69	2.7	mg/kg		8260B	07/16/12	2200
Methyl tert-butyl ether	U	0.71	2.7	mg/kg		8260B	07/16/12	2200
Naphthalene	59.	1.2	14.	mg/kg		8260B	07/16/12	2200
Toluene	180	0.69	14.	mg/kg		8260B	07/16/12	2200
Total Xylenes	690	1.0	8.1	mg/kg		8260B	07/16/12	2200
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	07/16/12	2200
Dibromofluoromethane	96.4			% Rec.		8260B	07/16/12	2200
4-Bromofluorobenzene	95.5			% Rec.		8260B	07/16/12	2200

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-07

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-2S 10-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 11:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.4	0.0330	0.100	%		2540G	07/17/12	1
Benzene	2.8	0.28	1.0	mg/kg		8260B	07/13/12	840
Ethylbenzene	12.	0.31	1.0	mg/kg		8260B	07/16/12	840
Isopropylbenzene	3.7	0.26	1.0	mg/kg		8260B	07/13/12	840
Methyl tert-butyl ether	U	0.27	1.0	mg/kg		8260B	07/13/12	840
Naphthalene	9.0	0.46	5.0	mg/kg		8260B	07/13/12	840
Toluene	1.6	0.26	5.0	mg/kg	J	8260B	07/16/12	840
Total Xylenes	29.	0.39	3.0	mg/kg		8260B	07/16/12	840
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	07/13/12	840
Dibromofluoromethane	96.3			% Rec.		8260B	07/13/12	840
4-Bromofluorobenzene	97.7			% Rec.		8260B	07/13/12	840

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-08

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-2S 12-13FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 11:11

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.0	0.0330	0.100	%		2540G	07/17/12	1
Benzene	19.	0.35	1.2	mg/kg		8260B	07/13/12	1020
Ethylbenzene	180	0.38	1.2	mg/kg		8260B	07/13/12	1020
Isopropylbenzene	19.	0.32	1.2	mg/kg		8260B	07/13/12	1020
Methyl tert-butyl ether	U	0.33	1.2	mg/kg		8260B	07/13/12	1020
Naphthalene	58.	0.56	6.1	mg/kg		8260B	07/13/12	1020
Toluene	65.	0.32	6.1	mg/kg		8260B	07/13/12	1020
Total Xylenes	810	2.3	18.	mg/kg		8260B	07/16/12	5100
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/13/12	1020
Dibromofluoromethane	97.6			% Rec.		8260B	07/13/12	1020
4-Bromofluorobenzene	95.1			% Rec.		8260B	07/13/12	1020

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

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July 17,2012

ESC Sample # : L584678-09

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-2S 15-17FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 11:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	80.1	0.0330	0.100	%		2540G	07/17/12	1
Benzene	14.	0.27	0.99	mg/kg		8260B	07/13/12	790
Ethylbenzene	72.	0.30	0.99	mg/kg		8260B	07/13/12	790
Isopropylbenzene	7.2	0.25	0.99	mg/kg		8260B	07/13/12	790
Methyl tert-butyl ether	U	0.26	0.99	mg/kg		8260B	07/13/12	790
Naphthalene	24.	0.44	4.9	mg/kg		8260B	07/13/12	790
Toluene	120	0.25	4.9	mg/kg		8260B	07/13/12	790
Total Xylenes	360	0.36	3.0	mg/kg		8260B	07/13/12	790
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	07/13/12	790
Dibromofluoromethane	95.5			% Rec.		8260B	07/13/12	790
4-Bromofluorobenzene	98.5			% Rec.		8260B	07/13/12	790

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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July 17,2012

ESC Sample # : L584678-10

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-1S 10-12.5FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 12:25

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.7	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.6	0.53	1.9	mg/kg	J	8260B	07/13/12	1560
Ethylbenzene	190	0.58	1.9	mg/kg		8260B	07/13/12	1560
Isopropylbenzene	31.	0.49	1.9	mg/kg		8260B	07/13/12	1560
Methyl tert-butyl ether	U	0.50	1.9	mg/kg		8260B	07/13/12	1560
Naphthalene	82.	0.86	9.3	mg/kg		8260B	07/13/12	1560
Toluene	2.5	0.49	9.3	mg/kg	J	8260B	07/13/12	1560
Total Xylenes	330	0.72	5.6	mg/kg		8260B	07/13/12	1560
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	1560
Dibromofluoromethane	99.4			% Rec.		8260B	07/13/12	1560
4-Bromofluorobenzene	104.			% Rec.		8260B	07/13/12	1560

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
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July 17,2012

ESC Sample # : L584678-11

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-1S 15-17.5FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 12:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.8	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.7	0.11	0.40	mg/kg		8260B	07/13/12	330
Ethylbenzene	12.	0.12	0.40	mg/kg		8260B	07/13/12	330
Isopropylbenzene	1.5	0.10	0.40	mg/kg		8260B	07/13/12	330
Methyl tert-butyl ether	U	0.11	0.40	mg/kg		8260B	07/13/12	330
Naphthalene	5.9	0.18	2.0	mg/kg		8260B	07/13/12	330
Toluene	11.	0.10	2.0	mg/kg		8260B	07/13/12	330
Total Xylenes	61.	0.15	1.2	mg/kg		8260B	07/13/12	330
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	07/13/12	330
Dibromofluoromethane	97.4			% Rec.		8260B	07/13/12	330
4-Bromofluorobenzene	109.			% Rec.		8260B	07/13/12	330

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-12

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-MW8 10-13FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 08:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	85.2	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.61	0.014	0.048	mg/kg		8260B	07/16/12	40.5
Ethylbenzene	0.35	0.015	0.048	mg/kg		8260B	07/16/12	40.5
Isopropylbenzene	0.11	0.013	0.048	mg/kg		8260B	07/16/12	40.5
Methyl tert-butyl ether	U	0.013	0.048	mg/kg		8260B	07/16/12	40.5
Naphthalene	0.12	0.022	0.24	mg/kg	J	8260B	07/16/12	40.5
Toluene	0.14	0.013	0.24	mg/kg	J	8260B	07/16/12	40.5
Total Xylenes	1.2	0.019	0.14	mg/kg		8260B	07/16/12	40.5
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	07/16/12	40.5
Dibromofluoromethane	93.8			% Rec.		8260B	07/16/12	40.5
4-Bromofluorobenzene	92.1			% Rec.		8260B	07/16/12	40.5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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July 17,2012

ESC Sample # : L584678-13

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-1N 10-12.5FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 12:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.3	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.2	0.52	1.8	mg/kg	J	8260B	07/13/12	1520
Ethylbenzene	43.	0.57	1.8	mg/kg		8260B	07/13/12	1520
Isopropylbenzene	8.6	0.48	1.8	mg/kg		8260B	07/13/12	1520
Methyl tert-butyl ether	U	0.49	1.8	mg/kg		8260B	07/13/12	1520
Naphthalene	14.	0.84	9.1	mg/kg		8260B	07/13/12	1520
Toluene	1.4	0.47	9.1	mg/kg	J	8260B	07/13/12	1520
Total Xylenes	84.	0.70	5.5	mg/kg		8260B	07/13/12	1520
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	07/13/12	1520
Dibromofluoromethane	99.9			% Rec.		8260B	07/13/12	1520
4-Bromofluorobenzene	99.4			% Rec.		8260B	07/13/12	1520

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-14

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-1N 15-17.5FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 12:55

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.1	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.2	0.24	0.88	mg/kg		8260B	07/13/12	720
Ethylbenzene	17.	0.27	0.88	mg/kg		8260B	07/13/12	720
Isopropylbenzene	2.2	0.23	0.88	mg/kg		8260B	07/13/12	720
Methyl tert-butyl ether	U	0.23	0.88	mg/kg		8260B	07/13/12	720
Naphthalene	7.9	0.40	4.4	mg/kg		8260B	07/13/12	720
Toluene	5.5	0.22	4.4	mg/kg		8260B	07/13/12	720
Total Xylenes	82.	0.33	2.6	mg/kg		8260B	07/13/12	720
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	720
Dibromofluoromethane	100.			% Rec.		8260B	07/13/12	720
4-Bromofluorobenzene	104.			% Rec.		8260B	07/13/12	720

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-15

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-4N 10-11.5FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 13:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.2	0.0330	0.100	%		2540G	07/17/12	1
Benzene	2.5	0.65	2.3	mg/kg		8260B	07/13/12	1925
Ethylbenzene	53.	0.72	2.3	mg/kg		8260B	07/13/12	1925
Isopropylbenzene	7.4	0.60	2.3	mg/kg		8260B	07/13/12	1925
Methyl tert-butyl ether	U	0.62	2.3	mg/kg		8260B	07/13/12	1925
Naphthalene	25.	1.1	11.	mg/kg		8260B	07/13/12	1925
Toluene	1.1	0.60	11.	mg/kg	J	8260B	07/13/12	1925
Total Xylenes	120	0.88	6.8	mg/kg		8260B	07/13/12	1925
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	1925
Dibromofluoromethane	100.			% Rec.		8260B	07/13/12	1925
4-Bromofluorobenzene	100.			% Rec.		8260B	07/13/12	1925

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-16

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-4N 15-17FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 13:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.4	0.0330	0.100	%		2540G	07/17/12	1
Benzene	21.	1.4	5.0	mg/kg		8260B	07/13/12	4050
Ethylbenzene	84.	1.5	5.0	mg/kg		8260B	07/13/12	4050
Isopropylbenzene	9.3	1.3	5.0	mg/kg		8260B	07/13/12	4050
Methyl tert-butyl ether	U	1.3	5.0	mg/kg		8260B	07/13/12	4050
Naphthalene	34.	2.2	25.	mg/kg		8260B	07/13/12	4050
Toluene	74.	1.3	25.	mg/kg		8260B	07/13/12	4050
Total Xylenes	400	1.9	15.	mg/kg		8260B	07/13/12	4050
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	4050
Dibromofluoromethane	101.			% Rec.		8260B	07/13/12	4050
4-Bromofluorobenzene	103.			% Rec.		8260B	07/13/12	4050

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-17

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-8N 10-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 13:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.5	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.9	1.3	4.8	mg/kg	J	8260B	07/13/12	3950
Ethylbenzene	85.	1.5	4.8	mg/kg		8260B	07/13/12	3950
Isopropylbenzene	11.	1.2	4.8	mg/kg		8260B	07/13/12	3950
Methyl tert-butyl ether	U	1.3	4.8	mg/kg		8260B	07/13/12	3950
Naphthalene	34.	2.2	24.	mg/kg		8260B	07/13/12	3950
Toluene	2.5	1.2	24.	mg/kg	J	8260B	07/13/12	3950
Total Xylenes	360	1.8	14.	mg/kg		8260B	07/13/12	3950
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/13/12	3950
Dibromofluoromethane	96.7			% Rec.		8260B	07/13/12	3950
4-Bromofluorobenzene	104.			% Rec.		8260B	07/13/12	3950

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-18

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-8N 12-14FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 13:31

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.7	0.0330	0.100	%		2540G	07/17/12	1
Benzene	2.7	0.53	1.9	mg/kg		8260B	07/13/12	1560
Ethylbenzene	58.	0.58	1.9	mg/kg		8260B	07/13/12	1560
Isopropylbenzene	7.0	0.49	1.9	mg/kg		8260B	07/13/12	1560
Methyl tert-butyl ether	U	0.50	1.9	mg/kg		8260B	07/13/12	1560
Naphthalene	24.	0.86	9.4	mg/kg		8260B	07/13/12	1560
Toluene	2.2	0.49	9.4	mg/kg	J	8260B	07/13/12	1560
Total Xylenes	240	0.72	5.6	mg/kg		8260B	07/13/12	1560
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/13/12	1560
Dibromofluoromethane	97.0			% Rec.		8260B	07/13/12	1560
4-Bromofluorobenzene	99.9			% Rec.		8260B	07/13/12	1560

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

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611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-19

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-8N 15-16FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 13:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	80.2	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.44	0.013	0.047	mg/kg		8260B	07/16/12	38
Ethylbenzene	4.0	0.014	0.047	mg/kg		8260B	07/16/12	38
Isopropylbenzene	0.36	0.012	0.047	mg/kg		8260B	07/16/12	38
Methyl tert-butyl ether	U	0.012	0.047	mg/kg		8260B	07/16/12	38
Naphthalene	2.7	0.021	0.24	mg/kg		8260B	07/16/12	38
Toluene	1.1	0.012	0.24	mg/kg		8260B	07/16/12	38
Total Xylenes	17.	0.017	0.14	mg/kg		8260B	07/16/12	38
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/16/12	38
Dibromofluoromethane	98.7			% Rec.		8260B	07/16/12	38
4-Bromofluorobenzene	96.3			% Rec.		8260B	07/16/12	38

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-20

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P2 10-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.1	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.29	0.085	0.30	mg/kg	J	8260B	07/16/12	250
Ethylbenzene	19.	0.094	0.30	mg/kg		8260B	07/16/12	250
Isopropylbenzene	10.	0.078	0.30	mg/kg		8260B	07/16/12	250
Methyl tert-butyl ether	U	0.081	0.30	mg/kg		8260B	07/16/12	250
Naphthalene	24.	0.14	1.5	mg/kg		8260B	07/16/12	250
Toluene	0.43	0.078	1.5	mg/kg	J	8260B	07/16/12	250
Total Xylenes	4.1	0.12	0.90	mg/kg		8260B	07/16/12	250
Surrogate Recovery								
Toluene-d8	96.5			% Rec.		8260B	07/16/12	250
Dibromofluoromethane	94.9			% Rec.		8260B	07/16/12	250
4-Bromofluorobenzene	99.0			% Rec.		8260B	07/16/12	250

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-21

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P2 15-17FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 10:05

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	80.9	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.7	0.14	0.49	mg/kg		8260B	07/13/12	400
Ethylbenzene	23.	0.15	0.49	mg/kg		8260B	07/13/12	400
Isopropylbenzene	3.5	0.12	0.49	mg/kg		8260B	07/13/12	400
Methyl tert-butyl ether	U	0.13	0.49	mg/kg		8260B	07/13/12	400
Naphthalene	8.2	0.22	2.5	mg/kg	J3	8260B	07/13/12	400
Toluene	1.7	0.12	2.5	mg/kg	J	8260B	07/13/12	400
Total Xylenes	110	0.18	1.5	mg/kg		8260B	07/13/12	400
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	400
Dibromofluoromethane	80.1			% Rec.		8260B	07/13/12	400
4-Bromofluorobenzene	116.			% Rec.		8260B	07/13/12	400

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-22

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P3 11-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 08:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.1	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.96	0.19	0.68	mg/kg		8260B	07/13/12	565
Ethylbenzene	3.6	0.21	0.68	mg/kg		8260B	07/13/12	565
Isopropylbenzene	2.4	0.18	0.68	mg/kg		8260B	07/13/12	565
Methyl tert-butyl ether	U	0.18	0.68	mg/kg		8260B	07/13/12	565
Naphthalene	1.7	0.31	3.4	mg/kg	JJ3	8260B	07/13/12	565
Toluene	0.83	0.18	3.4	mg/kg	J	8260B	07/13/12	565
Total Xylenes	13.	0.26	2.0	mg/kg		8260B	07/13/12	565
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	565
Dibromofluoromethane	80.8			% Rec.		8260B	07/13/12	565
4-Bromofluorobenzene	116.			% Rec.		8260B	07/13/12	565

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-23

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P3 15-16FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 08:55

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.8	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.2	0.014	0.051	mg/kg		8260B	07/13/12	42
Ethylbenzene	3.4	0.016	0.051	mg/kg		8260B	07/13/12	42
Isopropylbenzene	0.39	0.013	0.051	mg/kg		8260B	07/13/12	42
Methyl tert-butyl ether	0.12	0.014	0.051	mg/kg		8260B	07/13/12	42
Naphthalene	1.9	0.023	0.25	mg/kg	J3	8260B	07/13/12	42
Toluene	0.30	0.013	0.25	mg/kg		8260B	07/13/12	42
Total Xylenes	13.	0.019	0.15	mg/kg		8260B	07/13/12	42
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	07/13/12	42
Dibromofluoromethane	78.5			% Rec.		8260B	07/13/12	42
4-Bromofluorobenzene	116.			% Rec.		8260B	07/13/12	42

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-24

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P4 10-12FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 09:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.1	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.31	0.013	0.045	mg/kg		8260B	07/13/12	37.5
Ethylbenzene	0.44	0.014	0.045	mg/kg		8260B	07/13/12	37.5
Isopropylbenzene	0.099	0.012	0.045	mg/kg		8260B	07/13/12	37.5
Methyl tert-butyl ether	U	0.012	0.045	mg/kg		8260B	07/13/12	37.5
Naphthalene	0.073	0.021	0.22	mg/kg	JJ3	8260B	07/13/12	37.5
Toluene	0.072	0.012	0.22	mg/kg	J	8260B	07/13/12	37.5
Total Xylenes	0.56	0.017	0.14	mg/kg		8260B	07/13/12	37.5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	07/13/12	37.5
Dibromofluoromethane	79.5			% Rec.		8260B	07/13/12	37.5
4-Bromofluorobenzene	118.			% Rec.		8260B	07/13/12	37.5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-25

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P4 15-16FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 08:25

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.5	0.0330	0.100	%		2540G	07/17/12	1
Benzene	1.9	0.12	0.44	mg/kg		8260B	07/13/12	365
Ethylbenzene	22.	0.14	0.44	mg/kg		8260B	07/13/12	365
Isopropylbenzene	2.8	0.11	0.44	mg/kg		8260B	07/13/12	365
Methyl tert-butyl ether	U	0.12	0.44	mg/kg		8260B	07/13/12	365
Naphthalene	8.1	0.20	2.2	mg/kg	J3	8260B	07/13/12	365
Toluene	0.83	0.11	2.2	mg/kg	J	8260B	07/13/12	365
Total Xylenes	79.	0.17	1.3	mg/kg		8260B	07/13/12	365
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/13/12	365
Dibromofluoromethane	79.4			% Rec.		8260B	07/13/12	365
4-Bromofluorobenzene	115.			% Rec.		8260B	07/13/12	365

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 17,2012

ESC Sample # : L584678-26

Date Received : July 12, 2012
Description : Soil

Site ID : 03-07315

Sample ID : SB-P4 20-22FT

Project # : ARCH ST

Collected By : J. Swogger
Collection Date : 07/10/12 09:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	87.2	0.0330	0.100	%		2540G	07/17/12	1
Benzene	0.11	0.00034	0.0011	mg/kg		8260B	07/13/12	1
Ethylbenzene	0.25	0.014	0.045	mg/kg		8260B	07/16/12	39
Isopropylbenzene	0.011	0.00031	0.0011	mg/kg		8260B	07/13/12	1
Methyl tert-butyl ether	0.014	0.00032	0.0011	mg/kg		8260B	07/13/12	1
Naphthalene	0.026	0.00055	0.0057	mg/kg	J3	8260B	07/13/12	1
Toluene	0.10	0.00031	0.0057	mg/kg		8260B	07/13/12	1
Total Xylenes	0.80	0.018	0.13	mg/kg		8260B	07/16/12	39
Surrogate Recovery								
Toluene-d8	99.0			% Rec.		8260B	07/13/12	1
Dibromofluoromethane	86.2			% Rec.		8260B	07/13/12	1
4-Bromofluorobenzene	100.			% Rec.		8260B	07/13/12	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L584678-01	WG602402	SAMP	Benzene	R2256693	J
	WG602402	SAMP	Toluene	R2256693	J
L584678-02	WG602402	SAMP	Benzene	R2256693	J
	WG602402	SAMP	Toluene	R2256693	J
L584678-04	WG602402	SAMP	Naphthalene	R2256693	J
	WG602402	SAMP	Toluene	R2256693	J
L584678-05	WG602402	SAMP	Toluene	R2256693	J
L584678-07	WG602862	SAMP	Toluene	R2257534	J
L584678-10	WG602402	SAMP	Benzene	R2256693	J
	WG602402	SAMP	Toluene	R2256693	J
L584678-12	WG602862	SAMP	Naphthalene	R2257534	J
	WG602862	SAMP	Toluene	R2257534	J
L584678-13	WG602402	SAMP	Benzene	R2256693	J
	WG602402	SAMP	Toluene	R2256693	J
L584678-15	WG602402	SAMP	Toluene	R2256693	J
L584678-17	WG602402	SAMP	Benzene	R2256693	J
	WG602402	SAMP	Toluene	R2256693	J
L584678-18	WG602402	SAMP	Toluene	R2256693	J
L584678-20	WG602862	SAMP	Benzene	R2257534	J
	WG602862	SAMP	Toluene	R2257534	J
L584678-21	WG602403	SAMP	Naphthalene	R2256694	J3
	WG602403	SAMP	Toluene	R2256694	J
L584678-22	WG602403	SAMP	Naphthalene	R2256694	JJ3
	WG602403	SAMP	Toluene	R2256694	J
L584678-23	WG602403	SAMP	Naphthalene	R2256694	J3
L584678-24	WG602403	SAMP	Naphthalene	R2256694	JJ3
	WG602403	SAMP	Toluene	R2256694	J
L584678-25	WG602403	SAMP	Naphthalene	R2256694	J3
	WG602403	SAMP	Toluene	R2256694	J
L584678-26	WG602403	SAMP	Naphthalene	R2256694	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Cooler #1 or 2

G102

Chain of Custody
Page 1 of 4

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH ST

ESC Key: INSITE-SS

Collected by: J. Swogger

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
SB-8S (10-12 ft)	Grab	SS		07/10/12	10:20	5	X	X	X		L584678-01
SB-8S (12-14 ft)				07/10/12	10:21	5	x	x	x		-02
SB-8S (15-17 ft)				07/10/12	10:25	5	x	x	x		-03
SB-4S (10-12 ft)				07/10/12	10:45	5	x	x	x		-04
SB-4S (12-14 ft)				07/10/12	10:46	5	x	x	x		-05
SB-4S (15-17 ft)				07/10/12	10:50	5	x	x	x		-06
SB-2S (10-12 ft)				07/10/12	11:10	5	x	x	x		-07
SB-2S (12-13 ft)				07/10/12	11:11	5	x	x	x		-08
SB-2S (15-17 ft)				07/10/12	11:15	5	x	x	x		-09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

5274 8784 1715 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐		Condition: (lab use only)
[signature]	7/11/12	1600				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6°C	Bottles Received: 130	OW COCSI JE
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 7/13/12	Time: 0900	pH Checked: NCF:

Cooler # 1 of 2

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Chain of Custody
Page 2 of 4

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH ST

ESC Key: INSITE-SS

Collected by: J. Swogger

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
SB-1S (10-12.5 FT)	Grab	SS		07/10/12	12:25	5	X	X	X		L584678-10
SB-1S (15-17.5 FT)	↓	↓		07/10/12	12:30	5	x	x	x		-11
SB-MW8 (10-13 FT)	↓	↓		07/10/12	08:30	5	x	x	x		-12

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

5 2748 7841 1748 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	7/11/12	1600			OK COCSI JE
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6°C / Bottles Received: 130	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 7/12/12 / Time: 0900	pH Checked: / NCF:

Cooler #2 of 2

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Soil

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH ST

ESC Key: INSITE-SS

Collected by: J. Swogger

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

Chain of Custody Page 3 of 4

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres	Remarks/Contaminant	Sample # (lab only)
SB-1N (10-12.5 FT)	Grab	SS		07/10/12	12:50	5	X	X	X		L584678-13
SB-1N (15-17.5 FT)				07/10/12	12:55	5	x	x	x		-14
SB-4N (10-11.5 FT)				07/10/12	13:10	5	x	x	x		-15
SB-4N (15-17 FT)				07/10/12	13:15	5	x	x	x		-16
SB-8N (10-12 FT)				07/10/12	13:30	5	x	x	x		-17
SB-8N (12-14 FT)				07/10/12	13:31	5	x	x	x		-18
SB-8N (15-16 FT)				07/10/12	13:35	5	x	x	x		-19
SB-P2 (10-12 FT)				07/10/12	10:00	5	x	x	x		-20
SB-P2 (15-17 FT)				07/10/12	10:05	5	x	x	x		-21

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

Flow _____ Other _____

	Date:	Time:				
Relinquished by: (Signature)	7/11/12	1600	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4°	Bottles Received: 130	COC1
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/12/12	Time: 0900	pH Checked: / NCF:

Cooler #2 of 2

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Chain of Custody
Page 4 of 4

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Soil

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: ARCH ST

ESC Key: INSITE-SS

Collected by: J. Swogger

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / NaBIS/Syr/MeOH	VOC Screen / 2ozClr / no pres	Total Solids / 4ozClr / no pres					Remarks/Contaminant	Sample # (lab only)
SB-P3 (11-12 FT)	Grab	SS		07/10/12	08:50	5	X	X	X						LS84678 -22
SB-P3 (15-16 FT)	↓	↓		07/10/12	08:55	5	x	x	x						-23
SB-P4 (10-12 FT)				07/10/12	09:20	5	x	x	x						-24
SB-P4 (15-16 FT)				07/10/12	08:25	5	X	X	X						-25
SB-P4 (20-22 FT)	↓	↓		07/10/12	09:30	5	X	X	X						-26

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: DI Priority

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐		Condition: CJ (lab use only)
[signature]	7/11/12	1600				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4	Bottles Received: 130	COCSI
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 7/12/12	Time: 0900	pH Checked: NCF:

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Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday October 17, 2013

Report Number: L662430
Samples Received: 10/10/13
Client Project: ARCH STREET

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 17,2013

ESC Sample # : L662430-01

Date Received : October 10, 2013
Description : Soil

Site ID : 03-07315

Sample ID : MW-10D 14-16 FT

Project # : ARCH STREET

Collected By : Rogers and Gaines
Collection Date : 10/08/13 11:17

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	83.4	0.0333	0.100	%		2540 G-2	10/17/13	1
Benzene	0.00077	0.00027	0.0012	mg/kg	J	8260B	10/14/13	1
Ethylbenzene	0.00085	0.00030	0.0012	mg/kg	J	8260B	10/14/13	1
Isopropylbenzene	0.0028	0.00024	0.0012	mg/kg		8260B	10/14/13	1
Methyl tert-butyl ether	U	0.00021	0.0012	mg/kg		8260B	10/14/13	1
Naphthalene	U	0.0010	0.0060	mg/kg		8260B	10/14/13	1
Toluene	0.0012	0.00043	0.0060	mg/kg	J	8260B	10/14/13	1
Total Xylenes	0.0044	0.00070	0.0036	mg/kg		8260B	10/14/13	1
Surrogate Recovery								
Toluene-d8	91.0			% Rec.		8260B	10/14/13	1
Dibromofluoromethane	96.5			% Rec.		8260B	10/14/13	1
4-Bromofluorobenzene	91.7			% Rec.		8260B	10/14/13	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 10/17/13 13:08 Printed: 10/17/13 13:08

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L662430-01	WG686954	SAMP	Benzene	R2839851	J
	WG686954	SAMP	Ethylbenzene	R2839851	J
	WG686954	SAMP	Toluene	R2839851	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Chain of Custody
Page 1 of 1

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information

Analysis/Container/Preservative

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

A127

Report to: Sara Giordano
Email to: lab@insitegroup.org

Project Description: Soil
City/State Collected: Kittanning, PA
Phone: 724 347 2101
FAX: 724 347 2139
Client Project #: Arch Street
ESC Key: INSITE-SS
Collected by: Rogers and Gaines
Site/Facility ID#: 03-07315
P.O #:
Collected by (signature):
Packed on Ice: N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%

Date Results Needed:
Email? ___ No ✓ Yes
FAX? ✓ No ___ Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI	Total Solids	VOC screen	Remarks/Contaminant	Sample # (lab only)
MW-10D (14-16 ft)	Grab	SS	14-16	10/08/13	1117	5	X	X	X		[illegible]

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

pH ___ Temp ___
Flow ___ Other ___

Remarks: DI [illegible]

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
[illegible]	10/9/13	1439	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ___

Condition: (lab use only) [illegible]

Temp: [illegible]
Bottles Received:
Date: [illegible]
Time: [illegible]
pH Checked:
NCF:

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday October 17, 2013

Report Number: L662433
Samples Received: 10/10/13
Client Project: ARCH STREET

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 17,2013

ESC Sample # : L662433-01

Date Received : October 10, 2013
Description : Soil

Site ID : 03-07315

Sample ID : MW-11 17-19 FT

Project # : ARCH STREET

Collected By : Rogers and Gaines
Collection Date : 10/08/13 10:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.2	0.0333	0.100	%		2540 G-2	10/17/13	1
Benzene	U	0.040	0.18	mg/kg		8260B	10/14/13	150
Ethylbenzene	0.51	0.044	0.18	mg/kg		8260B	10/14/13	150
Isopropylbenzene	3.4	0.036	0.18	mg/kg		8260B	10/14/13	150
Methyl tert-butyl ether	U	0.032	0.18	mg/kg		8260B	10/14/13	150
Naphthalene	0.92	0.15	0.91	mg/kg		8260B	10/14/13	150
Toluene	U	0.065	0.91	mg/kg		8260B	10/14/13	150
Total Xylenes	0.57	0.10	0.55	mg/kg		8260B	10/14/13	150
Surrogate Recovery								
Toluene-d8	91.3			% Rec.		8260B	10/14/13	150
Dibromofluoromethane	90.0			% Rec.		8260B	10/14/13	150
4-Bromofluorobenzene	88.6			% Rec.		8260B	10/14/13	150

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
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The reported analytical results relate only to the sample submitted
Reported: 10/17/13 13:08 Printed: 10/17/13 13:08

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by:

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12065 Lebanon Road
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Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859
A128

Report to: Sara Giordano
Email to: lab@insitegroup.org
Project Description: Soil
City Sample Collected: Kittanning, PA
Phone: 724 347 2101
FAX: 724 347 2139
Client Project #: Arch Street
ESC Key: INSITE-SS
Collected by: Rogers and Gaines
Site/Facility ID#: 03-07315
P.O.#
Collected by (signature):
Rush? (Lab MUST Be Notified)
Same Day 200%
Next Day 100%
Two Day 50%
Date Results Needed:
Email? No Yes
FAX? No Yes
No. of Cntrs
Packed on Ice: N Y
CoCode: (lab use only)
Template/Prelogin:
Shipped Via:
Remarks/Contaminant
Sample # (lab only)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time		v8260 BTEXMNI	Total Solids	VOC screen
MW-11 (17-19 ft)	Grab	SS	17-19'	10/08/13	10:30	5	X	X	X

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH Temp
Flow Other

Remarks:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: UPS FedEx Courier
Condition: (lab use only)
Temp:
Bottles Received:
Date:
Time:
pH Checked:
NCF:

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Wednesday October 23, 2013

Report Number: L663743
Samples Received: 10/17/13
Client Project: ARCH STREET

Description: Soil

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 23,2013

ESC Sample # : L663743-01

Date Received : October 17, 2013
Description : Soil

Site ID : 03-07315

Sample ID : MW-12D 13-15FT

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/13 08:53

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	88.6	0.0333	0.100	%		2540 G-2	10/23/13	1
Benzene	0.012	0.00027	0.0011	mg/kg		8260B	10/19/13	1
Ethylbenzene	0.00091	0.00030	0.0011	mg/kg	J	8260B	10/19/13	1
Isopropylbenzene	0.0011	0.00024	0.0011	mg/kg		8260B	10/19/13	1
Methyl tert-butyl ether	0.00047	0.00021	0.0011	mg/kg	J	8260B	10/19/13	1
Naphthalene	U	0.0010	0.0056	mg/kg		8260B	10/19/13	1
Toluene	0.0034	0.00043	0.0056	mg/kg	J	8260B	10/19/13	1
Total Xylenes	0.0088	0.00070	0.0034	mg/kg		8260B	10/19/13	1
Surrogate Recovery								
Toluene-d8	113.			% Rec.	J1	8260B	10/19/13	1
Dibromofluoromethane	116.			% Rec.		8260B	10/19/13	1
4-Bromofluorobenzene	91.1			% Rec.		8260B	10/19/13	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L663743-01	WG687756	SAMP	Ethylbenzene	R2842001	J
	WG687756	SAMP	Methyl tert-butyl ether	R2842001	J
	WG687756	SAMP	Toluene	R2842001	J
	WG687756	SAMP	Toluene-d8	R2842001	J1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information

Report to: Sara Giordano
Email to: lab@insitegroup.org

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
B249
Phone (615) 758-5859
FAX (615) 758-5859

Project Description: Soil
City Site Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street
FSC Key: INSITE-SS

Collected by: Adam Gaines
Site/Facility ID#: 03-07315
P.O.#:

Collected by (signature):
Packed in Ice N Y X

Rush? (Lab MUST Be Notified)
Same Day..... 200%
Next Day..... 100%
Two Day..... 50%

Date Results Needed:
Email? No ✓ Yes
FAX? ✓ No Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - NaBIS/MeOH	VOC Screen - 2 oz Clr - no pres	Total Solids - 4 oz Clr - no pres	Remarks/Contaminant	Sample # (lab only)
MW-12D (13-15 ft)	Grab	SS		10/14/13	0853	5	X	X	X	2003793	

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH ____ Temp ____
Flow ____ Other ____

Remarks: DI Priority

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition (lab use only)
[signature]	10/16/13	1415			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1 / Bottles Received: 5	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 10/17/13 / Time: 0930	pH Checked: / NCF:

ATTACHMENT D

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Tuesday October 24, 2006

Report Number: L265540
Samples Received: 10/18/06
Client Project: ARCH ST

Description: Groundwater

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Reviewed By: _____
Craig Cothron, ESC Representative

Laboratory Certification Numbers

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GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-01

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 14:32

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1900	16.	50.	ug/l		8260B	10/20/06	50
Ethylbenzene	1500	13.	50.	ug/l		8260B	10/20/06	50
Isopropylbenzene	77.	15.	50.	ug/l		8260B	10/20/06	50
Methyl tert-butyl ether	530	16.	50.	ug/l		8260B	10/20/06	50
Naphthalene	450	13.	250	ug/l		8260B	10/20/06	50
Toluene	1400	160	250	ug/l		8260B	10/20/06	50
Total Xylenes	5200	36.	150	ug/l		8260B	10/20/06	50
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	10/20/06	50
Dibromofluoromethane	96.1			% Rec.		8260B	10/20/06	50
4-Bromofluorobenzene	101.			% Rec.		8260B	10/20/06	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-02

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 14:27

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2200	3.1	10.	ug/l	E	8260B	10/20/06	10
Ethylbenzene	1300	2.6	10.	ug/l		8260B	10/20/06	10
Isopropylbenzene	260	3.1	10.	ug/l		8260B	10/20/06	10
Methyl tert-butyl ether	23.	3.2	10.	ug/l		8260B	10/20/06	10
Naphthalene	220	2.7	50.	ug/l		8260B	10/20/06	10
Toluene	1300	32.	50.	ug/l		8260B	10/20/06	10
Total Xylenes	3200	7.3	30.	ug/l		8260B	10/20/06	10
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	10/20/06	10
Dibromofluoromethane	93.8			% Rec.		8260B	10/20/06	10
4-Bromofluorobenzene	101.			% Rec.		8260B	10/20/06	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-03

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 14:20

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	94.	0.31	1.0	ug/l		8260B	10/20/06	1
Ethylbenzene	0.35	0.26	1.0	ug/l	J	8260B	10/20/06	1
Isopropylbenzene	6.4	0.31	1.0	ug/l		8260B	10/20/06	1
Methyl tert-butyl ether	8.2	0.32	1.0	ug/l		8260B	10/20/06	1
Naphthalene	1.2	0.27	5.0	ug/l	J	8260B	10/20/06	1
Toluene	3.4	3.2	5.0	ug/l	J	8260B	10/20/06	1
Total Xylenes	5.9	0.73	3.0	ug/l		8260B	10/20/06	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	10/20/06	1
Dibromofluoromethane	92.0			% Rec.		8260B	10/20/06	1
4-Bromofluorobenzene	101.			% Rec.		8260B	10/20/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-04

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 14:08

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	10/20/06	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Methyl tert-butyl ether	24.	0.32	1.0	ug/l		8260B	10/20/06	1
Naphthalene	U	0.27	5.0	ug/l		8260B	10/20/06	1
Toluene	U	3.2	5.0	ug/l		8260B	10/20/06	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	10/20/06	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	10/20/06	1
Dibromofluoromethane	96.2			% Rec.		8260B	10/20/06	1
4-Bromofluorobenzene	99.0			% Rec.		8260B	10/20/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
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October 24, 2006

ESC Sample # : L265540-05

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 14:15

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	10/20/06	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	10/20/06	1
Naphthalene	U	0.27	5.0	ug/l		8260B	10/20/06	1
Toluene	U	3.2	5.0	ug/l		8260B	10/20/06	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	10/20/06	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	10/20/06	1
Dibromofluoromethane	96.9			% Rec.		8260B	10/20/06	1
4-Bromofluorobenzene	98.3			% Rec.		8260B	10/20/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-06

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 14:03

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	10/20/06	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	10/20/06	1
Naphthalene	U	0.27	5.0	ug/l		8260B	10/20/06	1
Toluene	U	3.2	5.0	ug/l		8260B	10/20/06	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	10/20/06	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	10/20/06	1
Dibromofluoromethane	98.7			% Rec.		8260B	10/20/06	1
4-Bromofluorobenzene	98.0			% Rec.		8260B	10/20/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-07

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 13:18

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	10/20/06	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	10/20/06	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	10/20/06	1
Naphthalene	U	0.27	5.0	ug/l		8260B	10/20/06	1
Toluene	U	3.2	5.0	ug/l		8260B	10/20/06	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	10/20/06	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	10/20/06	1
Dibromofluoromethane	96.2			% Rec.		8260B	10/20/06	1
4-Bromofluorobenzene	98.1			% Rec.		8260B	10/20/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-08

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 13:28

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	170	0.31	1.0	ug/l		8260B	10/20/06	1
Ethylbenzene	9.5	0.26	1.0	ug/l		8260B	10/20/06	1
Isopropylbenzene	1.8	0.31	1.0	ug/l		8260B	10/20/06	1
Methyl tert-butyl ether	70.	0.32	1.0	ug/l		8260B	10/20/06	1
Naphthalene	6.0	0.27	5.0	ug/l		8260B	10/20/06	1
Toluene	19.	3.2	5.0	ug/l		8260B	10/20/06	1
Total Xylenes	100	0.73	3.0	ug/l		8260B	10/20/06	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	10/20/06	1
Dibromofluoromethane	96.8			% Rec.		8260B	10/20/06	1
4-Bromofluorobenzene	98.6			% Rec.		8260B	10/20/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-09

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-2

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 13:49

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	24000	160	500	ug/l		8260B	10/20/06	500
Ethylbenzene	5900	130	500	ug/l		8260B	10/20/06	500
Isopropylbenzene	490	150	500	ug/l	J	8260B	10/20/06	500
Methyl tert-butyl ether	7100	160	500	ug/l		8260B	10/20/06	500
Naphthalene	1300	130	2500	ug/l	J	8260B	10/20/06	500
Toluene	35000	1600	2500	ug/l		8260B	10/20/06	500
Total Xylenes	31000	360	1500	ug/l		8260B	10/20/06	500
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	10/20/06	500
Dibromofluoromethane	97.7			% Rec.		8260B	10/20/06	500
4-Bromofluorobenzene	99.4			% Rec.		8260B	10/20/06	500

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 24, 2006

ESC Sample # : L265540-10

Date Received : October 18, 2006
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 10/16/06 13:42

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	170	0.16	0.50	ug/l	E	8021	10/18/06	1
Toluene	7.3	1.6	5.0	ug/l		8021	10/18/06	1
Ethylbenzene	24.	0.16	0.50	ug/l		8021	10/18/06	1
Total Xylene	36.	0.50	1.5	ug/l		8021	10/18/06	1
Methyl tert-butyl ether	260	0.33	1.0	ug/l	E	8021	10/18/06	1
Surrogate Recovery (77-118)								
a,a,a-Trifluorotoluene(PID)	96.9			% Rec.		8021	10/18/06	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L265540-02	Benzene	E
L265540-03	Ethylbenzene	J
	Naphthalene	J
	Toluene	J
L265540-09	Isopropylbenzene	J
	Naphthalene	J
L265540-10	Benzene	E
	Methyl tert-butyl ether	E

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 South Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano
Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring
City/Sate Collected: Kittanning, PA

Phone: 724-347-2101
FAX: 724-347-2139

Client Project #: Arch St.
ESC Key: INSITE-GW

Collected by: Adam Gaines
Site/Facility ID#: 03-07315
P.O.#:

Collected by (signature): Adam Gaines
Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:
Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Chain of Custody
Page 1 of 2

Prepared by:

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Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	8260 (BTEX, M, N, IPB) - 40mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		10/16/06	1432	2	X		L26554001
MW-2	Grab	GW		10/16/06	1427	2	X		02
MW-3	Grab	GW		10/16/06	1420	2	X		03
MW-4	Grab	GW		10/16/06	1408	2	X		04
MW-5	Grab	GW		10/16/06	1415	2	X		05
MW-6	Grab	GW		10/16/06	1403	2	X		06
MW-7	Grab	GW		10/16/06	1318	2	X		07
EW-1	Grab	GW		10/16/06	1328	2	X		08
EW-2	Grab	GW		10/16/06	1349	2	X		09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1-Priority

8536 6613 8447

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____	Condition: (lab use only)
Mary Green	10/17/06	11:15			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.5° / Bottles Received: 20 / 75	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-18-6 / Time: 900	pH Checked: / NCF:

Insite Group, Inc.
611 South Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724-347-2101
FAX: 724-347-2139

Client Project #: Arch St.

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Chain of Custody
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Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	8021 (BTEX + MTBE) - 40mLAmb - HCl	Remarks/Contaminant	Sample # (lab only)
EW-3	Grab	GW		10/16/06	1342	2	X		L265540-10

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: DI-Priority 8536 6613 8447

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Mary Green	10/17/06	1115			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.5° Bottles Received: 20 ✓	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-18-6 Time: 900	pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Tuesday April 03, 2007

Report Number: L285674
Samples Received: 03/22/07
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Reviewed By: _____
Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Sample ID : MW-1

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 14:40

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	820	31.	100	ug/l		8260B	03/30/07	100
Ethylbenzene	610	26.	100	ug/l		8260B	03/30/07	100
Isopropylbenzene	46.	31.	100	ug/l	J	8260B	03/30/07	100
Methyl tert-butyl ether	U	32.	100	ug/l		8260B	03/30/07	100
Naphthalene	440	27.	500	ug/l	J	8260B	03/30/07	100
Toluene	570	320	500	ug/l		8260B	03/30/07	100
Total Xylenes	3600	73.	300	ug/l		8260B	03/30/07	100
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	03/30/07	100
Dibromofluoromethane	92.7			% Rec.		8260B	03/30/07	100
4-Bromofluorobenzene	111.			% Rec.		8260B	03/30/07	100

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-02

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Sample ID : MW-2

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 14:34

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	560	62.	200	ug/l		8260B	03/29/07	200
Ethylbenzene	310	51.	200	ug/l		8260B	03/29/07	200
Isopropylbenzene	100	62.	200	ug/l	J	8260B	03/29/07	200
Methyl tert-butyl ether	U	63.	200	ug/l		8260B	03/29/07	200
Naphthalene	130	53.	1000	ug/l	J	8260B	03/29/07	200
Toluene	U	640	1000	ug/l		8260B	03/29/07	200
Total Xylenes	440	140	600	ug/l	J	8260B	03/29/07	200
Surrogate Recovery								
Toluene-d8	94.4			% Rec.		8260B	03/29/07	200
Dibromofluoromethane	76.3			% Rec.		8260B	03/29/07	200
4-Bromofluorobenzene	95.0			% Rec.		8260B	03/29/07	200

U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
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April 03, 2007

ESC Sample # : L285674-03

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Sample ID : MW-3

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 14:27

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	16.	0.31	1.0	ug/l		8260B	03/28/07	1
Ethylbenzene	U	0.26	1.0	ug/l	J3	8260B	03/28/07	1
Isopropylbenzene	1.0	0.31	1.0	ug/l	J3	8260B	03/28/07	1
Methyl tert-butyl ether	8.3	0.32	1.0	ug/l		8260B	03/28/07	1
Naphthalene	U	0.27	5.0	ug/l	J3	8260B	03/28/07	1
Toluene	U	3.2	5.0	ug/l		8260B	03/28/07	1
Total Xylenes	0.93	0.73	3.0	ug/l	JJ3	8260B	03/28/07	1
Surrogate Recovery								
Toluene-d8	110.			% Rec.		8260B	03/28/07	1
Dibromofluoromethane	96.4			% Rec.		8260B	03/28/07	1
4-Bromofluorobenzene	105.			% Rec.		8260B	03/28/07	1

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REPORT OF ANALYSIS

Ms. Sara Giordano
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Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-04

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 14:20

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Ethylbenzene	0.31	0.26	1.0	ug/l	J	8260B	03/28/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Methyl tert-butyl ether	3.7	0.32	1.0	ug/l		8260B	03/28/07	1
Naphthalene	2.0	0.27	5.0	ug/l	J	8260B	03/28/07	1
Toluene	U	3.2	5.0	ug/l		8260B	03/28/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	03/28/07	1
Surrogate Recovery								
Toluene-d8	110.			% Rec.		8260B	03/28/07	1
Dibromofluoromethane	99.5			% Rec.		8260B	03/28/07	1
4-Bromofluorobenzene	104.			% Rec.		8260B	03/28/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-05

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 14:02

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	03/28/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	03/28/07	1
Naphthalene	0.57	0.27	5.0	ug/l	J	8260B	03/28/07	1
Toluene	U	3.2	5.0	ug/l		8260B	03/28/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	03/28/07	1
Surrogate Recovery								
Toluene-d8	109.			% Rec.		8260B	03/28/07	1
Dibromofluoromethane	95.5			% Rec.		8260B	03/28/07	1
4-Bromofluorobenzene	102.			% Rec.		8260B	03/28/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-06

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 13:50

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	03/28/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	03/28/07	1
Naphthalene	0.64	0.27	5.0	ug/l	J	8260B	03/28/07	1
Toluene	U	3.2	5.0	ug/l		8260B	03/28/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	03/28/07	1
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	03/28/07	1
Dibromofluoromethane	101.			% Rec.		8260B	03/28/07	1
4-Bromofluorobenzene	101.			% Rec.		8260B	03/28/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-07

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 13:39

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	0.41	0.31	1.0	ug/l	J	8260B	03/28/07	1
Ethylbenzene	0.31	0.26	1.0	ug/l	J	8260B	03/28/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	03/28/07	1
Naphthalene	0.44	0.27	5.0	ug/l	J	8260B	03/28/07	1
Toluene	U	3.2	5.0	ug/l		8260B	03/28/07	1
Total Xylenes	1.6	0.73	3.0	ug/l	J	8260B	03/28/07	1
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	03/28/07	1
Dibromofluoromethane	101.			% Rec.		8260B	03/28/07	1
4-Bromofluorobenzene	102.			% Rec.		8260B	03/28/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-08

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 13:07

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	510	3.1	10.	ug/l		8260B	03/29/07	10
Ethylbenzene	390	2.6	10.	ug/l		8260B	03/29/07	10
Isopropylbenzene	17.	3.1	10.	ug/l		8260B	03/29/07	10
Methyl tert-butyl ether	45.	3.2	10.	ug/l		8260B	03/29/07	10
Naphthalene	130	2.7	50.	ug/l		8260B	03/29/07	10
Toluene	180	32.	50.	ug/l		8260B	03/29/07	10
Total Xylenes	1900	7.3	30.	ug/l		8260B	03/29/07	10
Surrogate Recovery								
Toluene-d8	95.8			% Rec.		8260B	03/29/07	10
Dibromofluoromethane	75.8			% Rec.		8260B	03/29/07	10
4-Bromofluorobenzene	99.9			% Rec.		8260B	03/29/07	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-09

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 13:23

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	270	1.6	5.0	ug/l		8260B	03/29/07	5
Ethylbenzene	55.	1.3	5.0	ug/l		8260B	03/29/07	5
Isopropylbenzene	11.	1.5	5.0	ug/l		8260B	03/29/07	5
Methyl tert-butyl ether	140	1.6	5.0	ug/l		8260B	03/29/07	5
Naphthalene	19.	1.3	25.	ug/l	J	8260B	03/29/07	5
Toluene	20.	16.	25.	ug/l	J	8260B	03/29/07	5
Total Xylenes	61.	3.6	15.	ug/l		8260B	03/29/07	5
Surrogate Recovery								
Toluene-d8	95.3			% Rec.		8260B	03/29/07	5
Dibromofluoromethane	76.7			% Rec.		8260B	03/29/07	5
4-Bromofluorobenzene	95.0			% Rec.		8260B	03/29/07	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 03, 2007

ESC Sample # : L285674-10

Date Received : March 22, 2007
Description : Quarterly GW Monitoring

Site ID : 03-07315

Sample ID : TRIP BLANK

Project # : ARCH STREET

Collected By : Gaines/Caravagli
Collection Date : 03/20/07 00:00

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	03/28/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	03/28/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	03/28/07	1
Naphthalene	0.64	0.27	5.0	ug/l	J	8260B	03/28/07	1
Toluene	U	3.2	5.0	ug/l		8260B	03/28/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	03/28/07	1
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	03/28/07	1
Dibromofluoromethane	99.2			% Rec.		8260B	03/28/07	1
4-Bromofluorobenzene	102.			% Rec.		8260B	03/28/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L285674-01	Isopropylbenzene	J
	Naphthalene	J
L285674-02	Isopropylbenzene	J
	Naphthalene	J
	Total Xylenes	J
L285674-03	Ethylbenzene	J3
	Isopropylbenzene	J3
	Naphthalene	J3
	Total Xylenes	JJ3
L285674-04	Ethylbenzene	J
	Naphthalene	J
L285674-05	Naphthalene	J
L285674-06	Naphthalene	J
L285674-07	Benzene	J
	Ethylbenzene	J
	Naphthalene	J
	Total Xylenes	J
L285674-09	Naphthalene	J
	Toluene	J
L285674-10	Naphthalene	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits					(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane		68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8		76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene		79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Gaines and Caravagli

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N YX

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEX, M, N - 40mlAmb-HCl							Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		03/20/07	1440	2	X								128674-01
MW-2	Grab	GW		03/20/07	1434	2	X								-02
MW-3	Grab	GW		03/20/07	1427	2	X								-03
MW-4	Grab	GW		03/20/07	1420	2	X								-04
MW-5	Grab	GW		03/20/07	1402	2	X								-05
MW-6	Grab	GW		03/20/07	1350	2	X								-06
MW-7	Grab	GW		03/20/07	1339	2	X								-07
EW-1	Grab	GW		03/20/07	1307	2	X								-08
EW-3	Grab	GW		03/20/07	1323	2	X								-09

Chain of Custody
Page 1 of 2

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ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Adam Gaines	03/21/07	0930			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.3°C / Bottles Received: 18+TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3-22-7 / Time: 900	pH Checked: / NCF:

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Gaines and Caravagli

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Analysis/Container/Preservative: v8260 BTEX, M, N - 40mlAmb-HCl	Remarks/Contaminant	Sample # (lab only)
Trip Blank				03/20/07		1	X		L285614-10

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks: D/ Priority

pH _____ Temp _____

Flow _____ Other _____

Chain of Custody
Page 2 of 2

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Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	03/21/07	0930	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 3-3 C | Bottles Received: 18+TB

Date: 3-22-7 | Time: 900

Condition: (lab use only) OK

pH Checked: | NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Friday June 01, 2007

Report Number: L295019
Samples Received: 05/24/07
Client Project: ARCH ST

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-01

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 13:46

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2800	160	500	ug/l		8260B	05/31/07	500
Ethylbenzene	3200	130	500	ug/l		8260B	05/31/07	500
Isopropylbenzene	200	150	500	ug/l	J	8260B	05/31/07	500
Methyl tert-butyl ether	380	160	500	ug/l	J	8260B	05/31/07	500
Naphthalene	2000	130	2500	ug/l	J	8260B	05/31/07	500
Toluene	2500	1600	2500	ug/l	J	8260B	05/31/07	500
Total Xylenes	12000	360	1500	ug/l		8260B	05/31/07	500
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	05/31/07	500
Dibromofluoromethane	102.			% Rec.		8260B	05/31/07	500
4-Bromofluorobenzene	97.1			% Rec.		8260B	05/31/07	500

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
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Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-02

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 14:12

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	4000	6.2	20.	ug/l		8260B	06/01/07	20
Ethylbenzene	840	5.1	20.	ug/l		8260B	06/01/07	20
Isopropylbenzene	140	6.2	20.	ug/l		8260B	06/01/07	20
Methyl tert-butyl ether	26.	6.3	20.	ug/l		8260B	06/01/07	20
Naphthalene	160	5.3	100	ug/l		8260B	06/01/07	20
Toluene	1800	64.	100	ug/l		8260B	06/01/07	20
Total Xylenes	2600	14.	60.	ug/l		8260B	06/01/07	20
Surrogate Recovery								
Toluene-d8	99.8			% Rec.		8260B	06/01/07	20
Dibromofluoromethane	99.8			% Rec.		8260B	06/01/07	20
4-Bromofluorobenzene	80.2			% Rec.		8260B	06/01/07	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
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611 S. Irvine Avenue
Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-03

Site ID : 03-07315

Project # : ARCH ST

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Sample ID : MW-3

Collected By : Adam Gaines
Collection Date : 05/22/07 13:40

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	98.	0.31	1.0	ug/l		8260B	06/01/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	06/01/07	1
Isopropylbenzene	4.8	0.31	1.0	ug/l		8260B	06/01/07	1
Methyl tert-butyl ether	9.2	0.32	1.0	ug/l		8260B	06/01/07	1
Naphthalene	6.9	0.27	5.0	ug/l		8260B	06/01/07	1
Toluene	3.6	3.2	5.0	ug/l	J	8260B	06/01/07	1
Total Xylenes	5.1	0.73	3.0	ug/l		8260B	06/01/07	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/01/07	1
Dibromofluoromethane	97.3			% Rec.		8260B	06/01/07	1
4-Bromofluorobenzene	80.9			% Rec.		8260B	06/01/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-04

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 13:34

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	0.35	0.31	1.0	ug/l	J	8260B	06/01/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	06/01/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	06/01/07	1
Methyl tert-butyl ether	1.5	0.32	1.0	ug/l		8260B	06/01/07	1
Naphthalene	U	0.27	5.0	ug/l		8260B	06/01/07	1
Toluene	U	3.2	5.0	ug/l		8260B	06/01/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	06/01/07	1
Surrogate Recovery								
Toluene-d8	98.9			% Rec.		8260B	06/01/07	1
Dibromofluoromethane	97.9			% Rec.		8260B	06/01/07	1
4-Bromofluorobenzene	78.7			% Rec.	J2	8260B	06/01/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-05

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 13:28

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	06/01/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	06/01/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	06/01/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	06/01/07	1
Naphthalene	U	0.27	5.0	ug/l		8260B	06/01/07	1
Toluene	U	3.2	5.0	ug/l		8260B	06/01/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	06/01/07	1
Surrogate Recovery								
Toluene-d8	99.2			% Rec.		8260B	06/01/07	1
Dibromofluoromethane	100.			% Rec.		8260B	06/01/07	1
4-Bromofluorobenzene	79.9			% Rec.		8260B	06/01/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-06

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 13:22

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	06/01/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	06/01/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	06/01/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	06/01/07	1
Naphthalene	U	0.27	5.0	ug/l		8260B	06/01/07	1
Toluene	U	3.2	5.0	ug/l		8260B	06/01/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	06/01/07	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	06/01/07	1
Dibromofluoromethane	101.			% Rec.		8260B	06/01/07	1
4-Bromofluorobenzene	78.2			% Rec.	J2	8260B	06/01/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 01, 2007

ESC Sample # : L295019-07

Date Received : May 24, 2007
Description : Quarterly Groundwater monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 13:15

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.31	1.0	ug/l		8260B	05/30/07	1
Ethylbenzene	U	0.26	1.0	ug/l		8260B	05/30/07	1
Isopropylbenzene	U	0.31	1.0	ug/l		8260B	05/30/07	1
Methyl tert-butyl ether	U	0.32	1.0	ug/l		8260B	05/30/07	1
Naphthalene	0.61	0.27	5.0	ug/l	J	8260B	05/30/07	1
Toluene	U	3.2	5.0	ug/l		8260B	05/30/07	1
Total Xylenes	U	0.73	3.0	ug/l		8260B	05/30/07	1
Surrogate Recovery								
Toluene-d8	98.1			% Rec.		8260B	05/30/07	1
Dibromofluoromethane	97.4			% Rec.		8260B	05/30/07	1
4-Bromofluorobenzene	102.			% Rec.		8260B	05/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L295019-01	Isopropylbenzene	J
	Methyl tert-butyl ether	J
	Naphthalene	J
	Toluene	J
L295019-03	Toluene	J
L295019-04	Benzene	J
	4-Bromofluorobenzene	J2
L295019-06	4-Bromofluorobenzene	J2
L295019-07	Naphthalene	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch St.

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEX, M, N - 40mloAmb-HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		05/22/07	1346	2	X		L295019-01
MW-2	Grab	GW		05/22/07	1412	2	X		02
MW-3	Grab	GW		05/22/07	1340	2	X		03
MW-4	Grab	GW		05/22/07	1334	2	X		04
MW-5	Grab	GW		05/22/07	1328	2	X		05
MW-6	Grab	GW		05/22/07	1322	2	X		06
MW-7	Grab	GW		05/22/07	1315	2	X		07

Chain of Custody
Page 1 of 1

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FAX (615) 758-5859

CoCode 2 (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority 7194 3082 5490

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Adam Gaines	5/23/07	1045			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6° / Bottles Received: 14	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 52407 / Time: 9:00	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Thursday May 31, 2007

Report Number: L295021
Samples Received: 05/24/07
Client Project: ARCH ST

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

May 31, 2007

ESC Sample # : L295021-01

Date Received : May 24, 2007
Description : Quarterly groundwater monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 13:06

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	640	3.1	10.	ug/l		8260B	05/31/07	10
Ethylbenzene	260	2.6	10.	ug/l		8260B	05/31/07	10
Isopropylbenzene	7.6	3.1	10.	ug/l	J	8260B	05/31/07	10
Methyl tert-butyl ether	140	3.2	10.	ug/l		8260B	05/31/07	10
Naphthalene	480	2.7	50.	ug/l		8260B	05/31/07	10
Toluene	280	32.	50.	ug/l		8260B	05/31/07	10
Total Xylenes	2700	7.3	30.	ug/l		8260B	05/31/07	10
Surrogate Recovery								
Toluene-d8	126.			% Rec.		8260B	05/31/07	10
Dibromofluoromethane	100.			% Rec.		8260B	05/31/07	10
4-Bromofluorobenzene	104.			% Rec.		8260B	05/31/07	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

May 31, 2007

ESC Sample # : L295021-02

Date Received : May 24, 2007
Description : Quarterly groundwater monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 05/22/07 12:59

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	230	1.6	5.0	ug/l		8260B	05/31/07	5
Ethylbenzene	44.	1.3	5.0	ug/l		8260B	05/31/07	5
Isopropylbenzene	12.	1.5	5.0	ug/l		8260B	05/31/07	5
Methyl tert-butyl ether	200	1.6	5.0	ug/l		8260B	05/31/07	5
Naphthalene	16.	1.3	25.	ug/l	J	8260B	05/31/07	5
Toluene	U	16.	25.	ug/l		8260B	05/31/07	5
Total Xylenes	28.	3.6	15.	ug/l		8260B	05/31/07	5
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	05/31/07	5
Dibromofluoromethane	104.			% Rec.		8260B	05/31/07	5
4-Bromofluorobenzene	95.4			% Rec.		8260B	05/31/07	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L295021-01	Isopropylbenzene	J
L295021-02	Naphthalene	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits					(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane		68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8		76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene		79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch St.

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

v8260 BTEX, M, N - 40mloAmb-HCl

Chain of Custody
Page 1 of 1

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CoCode 2 (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEX, M, N - 40mloAmb-HCl	Remarks/Contaminant	Sample # (lab only)
EW-1	Grab	GW		05/22/07	1306	2	X		L295021-01
EW-3	Grab	GW		05/22/07	1259	2	X		02

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority 7/89 30025490

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____		Condition: (lab use only)	
Adam Gaines	5/23/07	1045					
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6°	Bottles Received: 4V	BL	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-24-07	Time: 9:00	pH Checked:	NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Tuesday October 02, 2007

Report Number: L312525
Samples Received: 09/26/07
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-01

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 14:29

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2800	72.	250	ug/l		8260B	09/30/07	250
Ethylbenzene	2000	56.	250	ug/l		8260B	09/30/07	250
Isopropylbenzene	U	77.	250	ug/l		8260B	09/30/07	250
Methyl tert-butyl ether	U	48.	250	ug/l	J3	8260B	09/30/07	250
Naphthalene	660	42.	1300	ug/l	J	8260B	09/30/07	250
Toluene	1500	80	1250	ug/l		8260B	09/30/07	250
Total Xylenes	6600	180	750	ug/l		8260B	09/30/07	250
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	09/30/07	250
Dibromofluoromethane	105.			% Rec.		8260B	09/30/07	250
4-Bromofluorobenzene	101.			% Rec.		8260B	09/30/07	250

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-02

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 14:23

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	3900	5.8	20.	ug/l		8260B	09/30/07	20
Ethylbenzene	710	4.4	20.	ug/l		8260B	09/30/07	20
Isopropylbenzene	150	6.2	20	ug/l		8260B	09/30/07	20
Methyl tert-butyl ether	U	3.9	20.	ug/l	J3	8260B	09/30/07	20
Naphthalene	120	3.3	100	ug/l		8260B	09/30/07	20
Toluene	630	6.4	100	ug/l		8260B	09/30/07	20
Total Xylenes	2100	14.	60	ug/l		8260B	09/30/07	20
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	09/30/07	20
Dibromofluoromethane	103.			% Rec.		8260B	09/30/07	20
4-Bromofluorobenzene	100.			% Rec.		8260B	09/30/07	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-03

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 14:16

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	14.	0.29	1.0	ug/l		8260B	09/30/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/30/07	1
Isopropylbenzene	0.37	0.31	1.	ug/l	J	8260B	09/30/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J3	8260B	09/30/07	1
Naphthalene	1.8	0.17	5.0	ug/l	J	8260B	09/30/07	1
Toluene	U	0.32	5.	ug/l		8260B	09/30/07	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/30/07	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	09/30/07	1
Dibromofluoromethane	105.			% Rec.		8260B	09/30/07	1
4-Bromofluorobenzene	102.			% Rec.		8260B	09/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-04

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 14:10

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	09/30/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/30/07	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	09/30/07	1
Methyl tert-butyl ether	7.0	0.19	1.0	ug/l	J3	8260B	09/30/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	09/30/07	1
Toluene	U	0.32	5.	ug/l		8260B	09/30/07	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/30/07	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	09/30/07	1
Dibromofluoromethane	105.			% Rec.		8260B	09/30/07	1
4-Bromofluorobenzene	97.7			% Rec.		8260B	09/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 10/02/07 09:51 Printed: 10/02/07 11:08

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-05

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 14:03

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	09/30/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/30/07	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	09/30/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J3	8260B	09/30/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	09/30/07	1
Toluene	U	0.32	5.	ug/l		8260B	09/30/07	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/30/07	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	09/30/07	1
Dibromofluoromethane	105.			% Rec.		8260B	09/30/07	1
4-Bromofluorobenzene	98.1			% Rec.		8260B	09/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-06

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 13:56

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	09/30/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/30/07	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	09/30/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J3	8260B	09/30/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	09/30/07	1
Toluene	U	0.32	5.	ug/l		8260B	09/30/07	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/30/07	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	09/30/07	1
Dibromofluoromethane	109.			% Rec.		8260B	09/30/07	1
4-Bromofluorobenzene	98.5			% Rec.		8260B	09/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312525-07

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 13:47

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	09/30/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/30/07	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	09/30/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J3	8260B	09/30/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	09/30/07	1
Toluene	U	0.32	5.	ug/l		8260B	09/30/07	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/30/07	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	09/30/07	1
Dibromofluoromethane	104.			% Rec.		8260B	09/30/07	1
4-Bromofluorobenzene	96.7			% Rec.		8260B	09/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L312525-01	Methyl tert-butyl ether	J3
	Naphthalene	J
L312525-02	Methyl tert-butyl ether	J3
L312525-03	Isopropylbenzene	J
	Methyl tert-butyl ether	J3
	Naphthalene	J
L312525-04	Methyl tert-butyl ether	J3
L312525-05	Methyl tert-butyl ether	J3
L312525-06	Methyl tert-butyl ether	J3
L312525-07	Methyl tert-butyl ether	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Groundwater

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

v8260 BTEXMNI - 40 mL AMB - HCl

Chain of Custody
Page 1 of 1

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ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
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Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL AMB - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		09/24/07	1429	2	X		L312525-01
MW-2	Grab	GW		09/24/07	1423	2	X		-02
MW-3	Grab	GW		09/24/07	1416	2	X		-03
MW-4	Grab	GW		09/24/07	1410	2	X		-04
MW-5	Grab	GW		09/24/07	1403	2	X		-05
MW-6	Grab	GW		09/24/07	1356	2	X		-06
MW-7	Grab	GW		09/24/07	1347	2	X		-07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____ pH _____ Temp _____

Remarks: DI Priority

9446 7859 5435 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Valerie Poole	9/25/07	15:00			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C / Bottles Received: 14 V	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9.26.07 / Time: 9:00Am	pH Checked: / NCF:

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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Tuesday October 02, 2007

Report Number: L312549
Samples Received: 09/26/07
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312549-01

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 13:27

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	130	0.29	1.0	ug/l	V	8260B	09/30/07	1
Ethylbenzene	20.	0.22	1.0	ug/l	J5J3	8260B	09/30/07	1
Isopropylbenzene	1.4	0.31	1.	ug/l	J5J3	8260B	09/30/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J5	8260B	09/30/07	1
Naphthalene	14.	0.17	5.0	ug/l		8260B	09/30/07	1
Toluene	15.	0.32	5.	ug/l	J5	8260B	09/30/07	1
Total Xylenes	220	0.73	3.	ug/l	J3J5	8260B	09/30/07	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	09/30/07	1
Dibromofluoromethane	105.			% Rec.		8260B	09/30/07	1
4-Bromofluorobenzene	103.			% Rec.		8260B	09/30/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 02, 2007

ESC Sample # : L312549-02

Date Received : September 26, 2007
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 09/24/07 13:37

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	310	1.4	5.0	ug/l		8260B	09/30/07	5
Ethylbenzene	34.	1.1	5.0	ug/l		8260B	09/30/07	5
Isopropylbenzene	9.2	1.5	5.	ug/l		8260B	09/30/07	5
Methyl tert-butyl ether	U	0.96	5.0	ug/l	J3	8260B	09/30/07	5
Naphthalene	14.	0.84	25.	ug/l	J	8260B	09/30/07	5
Toluene	6.	1.6	25.	ug/l	J	8260B	09/30/07	5
Total Xylenes	18.	3.6	15.	ug/l		8260B	09/30/07	5
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	09/30/07	5
Dibromofluoromethane	105.			% Rec.		8260B	09/30/07	5
4-Bromofluorobenzene	95.7			% Rec.		8260B	09/30/07	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L312549-01	Benzene	V
	Ethylbenzene	J5J3
	Isopropylbenzene	J5J3
	Methyl tert-butyl ether	J5
	Toluene	J5
	Total Xylenes	J3J5
L312549-02	Methyl tert-butyl ether	J3
	Naphthalene	J
	Toluene	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

	Control Limits				(AQ)	(SS)
2-Fluorophenol	31-119	Nitrobenzene-d5	43-118	Dibromfluoromethane	68-128	64-125
Phenol-d5	12-134	2-Fluorobiphenyl	45-128	Toluene-d8	76-115	69-118
2,4,6-Tribromophenol	51-141	Terphenyl-d14	43-137	4-Bromofluorobenzene	79-127	61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122

Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Groundwater

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice N

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mLAMB - HCl	Remarks/Contaminant	Sample # (lab only)
EW-1	Grab	GW		09/24/07	1327	2	X		L312549-01
EW-3	Grab	GW		09/24/07	1337	2	X		02

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: Dl Priority

9446785954 35

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐		Condition: (lab use only)
[signature]	9/25/07	15:00				[signature]
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C	Bottles Received: 4 V	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 9.26.07	Time: 9:00Am	pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Monday January 07, 2008

Report Number: L321889
Samples Received: 12/01/07
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jennifer Marlowe, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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9 Samples Reported: 12/06/07 16:08 Revised: 01/07/08 09:18

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-01

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 14:03

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2200	14.	50.	ug/l		8260B	12/04/07	50
Ethylbenzene	1600	11.	50.	ug/l		8260B	12/04/07	50
Isopropylbenzene	70.	9.5	50.	ug/l		8260B	12/04/07	50
Methyl tert-butyl ether	420	9.7	50.	ug/l		8260B	12/04/07	50
Naphthalene	440	8.4	250	ug/l		8260B	12/04/07	50
Toluene	880	13.	50.	ug/l		8260B	12/04/07	50
Total Xylenes	4700	50.	150	ug/l		8260B	12/04/07	50
Surrogate Recovery								
Toluene-d8	116.			% Rec.	J1	8260B	12/04/07	50
Dibromofluoromethane	113.			% Rec.		8260B	12/04/07	50
4-Bromofluorobenzene	96.3			% Rec.		8260B	12/04/07	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Fax (615) 758-5859

Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-02

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:56

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	520	5.8	20.	ug/l		8260B	12/04/07	20
Ethylbenzene	330	4.4	20.	ug/l		8260B	12/04/07	20
Isopropylbenzene	76.	3.8	20.	ug/l		8260B	12/04/07	20
Methyl tert-butyl ether	U	3.9	20.	ug/l		8260B	12/04/07	20
Naphthalene	13.	3.3	100	ug/l	J	8260B	12/04/07	20
Toluene	93.	5.4	20.	ug/l		8260B	12/04/07	20
Total Xylenes	780	20.	60.	ug/l		8260B	12/04/07	20
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	12/04/07	20
Dibromofluoromethane	119.			% Rec.		8260B	12/04/07	20
4-Bromofluorobenzene	102.			% Rec.		8260B	12/04/07	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-03

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:48

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	17.	1.4	5.0	ug/l		8260B	12/04/07	5
Ethylbenzene	U	1.1	5.0	ug/l		8260B	12/04/07	5
Isopropylbenzene	U	0.95	5.0	ug/l		8260B	12/04/07	5
Methyl tert-butyl ether	14.	0.97	5.0	ug/l		8260B	12/04/07	5
Naphthalene	U	0.84	25.	ug/l		8260B	12/04/07	5
Toluene	U	1.3	5.0	ug/l		8260B	12/04/07	5
Total Xylenes	U	5.0	15.	ug/l		8260B	12/04/07	5
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	12/04/07	5
Dibromofluoromethane	120.			% Rec.		8260B	12/04/07	5
4-Bromofluorobenzene	97.9			% Rec.		8260B	12/04/07	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-04

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:42

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	12/04/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	12/04/07	1
Isopropylbenzene	U	0.19	1.0	ug/l		8260B	12/04/07	1
Methyl tert-butyl ether	2.1	0.19	1.0	ug/l		8260B	12/04/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	12/04/07	1
Toluene	U	0.27	1.0	ug/l		8260B	12/04/07	1
Total Xylenes	U	0.99	3.0	ug/l		8260B	12/04/07	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	12/04/07	1
Dibromofluoromethane	122.			% Rec.		8260B	12/04/07	1
4-Bromofluorobenzene	96.1			% Rec.		8260B	12/04/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-05

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:34

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	12/04/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	12/04/07	1
Isopropylbenzene	U	0.19	1.0	ug/l		8260B	12/04/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	12/04/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	12/04/07	1
Toluene	U	0.27	1.0	ug/l		8260B	12/04/07	1
Total Xylenes	U	0.99	3.0	ug/l		8260B	12/04/07	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	12/04/07	1
Dibromofluoromethane	122.			% Rec.		8260B	12/04/07	1
4-Bromofluorobenzene	97.7			% Rec.		8260B	12/04/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-06

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	12/04/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	12/04/07	1
Isopropylbenzene	U	0.19	1.0	ug/l		8260B	12/04/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	12/04/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	12/04/07	1
Toluene	U	0.27	1.0	ug/l		8260B	12/04/07	1
Total Xylenes	U	0.99	3.0	ug/l		8260B	12/04/07	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	12/04/07	1
Dibromofluoromethane	120.			% Rec.		8260B	12/04/07	1
4-Bromofluorobenzene	96.7			% Rec.		8260B	12/04/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-07

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:16

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	12/04/07	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	12/04/07	1
Isopropylbenzene	U	0.19	1.0	ug/l		8260B	12/04/07	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	12/04/07	1
Naphthalene	U	0.17	5.0	ug/l		8260B	12/04/07	1
Toluene	U	0.27	1.0	ug/l		8260B	12/04/07	1
Total Xylenes	U	0.99	3.0	ug/l		8260B	12/04/07	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	12/04/07	1
Dibromofluoromethane	122.			% Rec.		8260B	12/04/07	1
4-Bromofluorobenzene	96.4			% Rec.		8260B	12/04/07	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-08

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 12:58

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	340	2.9	10.	ug/l		8260B	12/05/07	10
Ethylbenzene	26.	2.2	10.	ug/l		8260B	12/05/07	10
Isopropylbenzene	4.1	1.9	10.	ug/l	J	8260B	12/05/07	10
Methyl tert-butyl ether	91.	1.9	10.	ug/l		8260B	12/05/07	10
Naphthalene	18.	1.7	50.	ug/l	J	8260B	12/05/07	10
Toluene	42.	2.7	10.	ug/l		8260B	12/05/07	10
Total Xylenes	560	9.9	30.	ug/l		8260B	12/05/07	10
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	12/05/07	10
Dibromofluoromethane	115.			% Rec.		8260B	12/05/07	10
4-Bromofluorobenzene	101.			% Rec.		8260B	12/05/07	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

January 07, 2008

ESC Sample # : L321889-09

Date Received : December 01, 2007
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 11/28/07 13:07

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	150	1.4	5.0	ug/l		8260B	12/04/07	5
Ethylbenzene	14.	1.1	5.0	ug/l		8260B	12/04/07	5
Isopropylbenzene	6.6	0.95	5.0	ug/l		8260B	12/04/07	5
Methyl tert-butyl ether	120	0.97	5.0	ug/l		8260B	12/04/07	5
Naphthalene	19.	0.84	25.	ug/l	J	8260B	12/04/07	5
Toluene	3.6	1.3	5.0	ug/l	J	8260B	12/04/07	5
Total Xylenes	9.2	5.0	15.	ug/l	J	8260B	12/04/07	5
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	12/04/07	5
Dibromofluoromethane	99.0			% Rec.		8260B	12/04/07	5
4-Bromofluorobenzene	105.			% Rec.		8260B	12/04/07	5

U = ND (Not Detected)
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MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L321889-01	Toluene-d8	J1
L321889-02	Naphthalene	J
L321889-08	Isopropylbenzene	J
	Naphthalene	J
L321889-09	Naphthalene	J
	Toluene	J
	Total Xylenes	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano
Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring
City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street
ESC Key: INSITE-GW

Collected by: Adam Gaines
Site/Facility ID#: 03-07315
P.O.#:

Collected by (signature): Adam Gaines
Packed on Ice N Y(O)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative
v8260STARS - 40ml Amb - HCl

Chain of Custody
Page 1 of 1

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260STARS - 40ml Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		11/28/07	1403	2	X		L321889-01
MW-2	Grab	GW		11/28/07	1356	2	X		-02
MW-3	Grab	GW		11/28/07	1348	2	X		-03
MW-4	Grab	GW		11/28/07	1342	2	X		-04
MW-5	Grab	GW		11/28/07	1334	2	X		-05
MW-6	Grab	GW		11/28/07	1325	2	X		-06
MW-7	Grab	GW		11/28/07	1316	2	X		-07
EW-1	Grab	GW		11/28/07	1258	2	X		-08
EW-3	Grab	GW		11/28/07	1307	2	X		-09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

8577 6784 2330

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Adam Gaines	11/30/07	1600	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____

Temp: 3.6°C | Bottles Received: 18

Date: 12/1/07 | Time: 900

Condition: (lab use only) 9(C)

pH Checked: | NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Monday February 04, 2008

Report Number: L330005
Samples Received: 02/01/08
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-01

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 13:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2600	140	500	ug/l		8260B	02/03/08	500
Ethylbenzene	1800	110	500	ug/l		8260B	02/03/08	500
Isopropylbenzene	U	150	500	ug/l		8260B	02/03/08	500
Methyl tert-butyl ether	330	96.	500	ug/l	J	8260B	02/03/08	500
Naphthalene	320	84.	2500	ug/l	J	8260B	02/03/08	500
Toluene	1400	160	2500	ug/l	J	8260B	02/03/08	500
Total Xylenes	6400	360	1500	ug/l		8260B	02/03/08	500
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/03/08	500
Dibromofluoromethane	105.			% Rec.		8260B	02/03/08	500
4-Bromofluorobenzene	95.1			% Rec.		8260B	02/03/08	500

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-02

Site ID : 03-07315

Project # : ARCH STREET

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Sample ID : MW-2

Collected By : Adam Gaines
Collection Date : 01/30/08 13:32

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	3500	14.	50.	ug/l		8260B	02/03/08	50
Ethylbenzene	710	11.	50.	ug/l		8260B	02/03/08	50
Isopropylbenzene	120	15.	50	ug/l		8260B	02/03/08	50
Methyl tert-butyl ether	36.	9.6	50.	ug/l	J	8260B	02/03/08	50
Naphthalene	110	8.4	250	ug/l	J	8260B	02/03/08	50
Toluene	1500	16.	250	ug/l		8260B	02/03/08	50
Total Xylenes	2200	36.	150	ug/l		8260B	02/03/08	50
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/03/08	50
Dibromofluoromethane	106.			% Rec.		8260B	02/03/08	50
4-Bromofluorobenzene	95.0			% Rec.		8260B	02/03/08	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-03

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 13:19

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	34.	0.29	1.0	ug/l		8260B	02/03/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	0.76	0.31	1.	ug/l	J	8260B	02/03/08	1
Methyl tert-butyl ether	7.5	0.19	1.0	ug/l		8260B	02/03/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	0.88	0.32	5.	ug/l	J	8260B	02/03/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/03/08	1
Surrogate Recovery								
Toluene-d8	99.2			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	104.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	88.2			% Rec.		8260B	02/03/08	1

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-04

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 13:06

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/03/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/03/08	1
Methyl tert-butyl ether	0.70	0.19	1.0	ug/l	J	8260B	02/03/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	U	0.32	5.	ug/l		8260B	02/03/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/03/08	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	107.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	91.8			% Rec.		8260B	02/03/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-05

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 12:58

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/03/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/03/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	02/03/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	U	0.32	5.	ug/l		8260B	02/03/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/03/08	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	106.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	94.7			% Rec.		8260B	02/03/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-06

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 12:51

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/03/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/03/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	02/03/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	U	0.32	5.	ug/l		8260B	02/03/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/03/08	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	107.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	91.6			% Rec.		8260B	02/03/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 04, 2008

ESC Sample # : L330005-07

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 12:42

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/03/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/03/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	02/03/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	U	0.32	5.	ug/l		8260B	02/03/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/03/08	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	106.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	92.7			% Rec.		8260B	02/03/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L330005-01	Methyl tert-butyl ether	J
	Naphthalene	J
	Toluene	J
L330005-02	Methyl tert-butyl ether	J
	Naphthalene	J
L330005-03	Isopropylbenzene	J
	Toluene	J
L330005-04	Methyl tert-butyl ether	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice: N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

v8260 BTEXMNI - 40 mLAMB - HCl

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
Phone (615) 758-5858
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FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mLAMB - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		01/30/08	1325	2	X		L330005-01
MW-2	Grab	GW		01/30/08	1332	2	X		02
MW-3	Grab	GW		01/30/08	1319	2	X		03
MW-4	Grab	GW		01/30/08	1306	2	X		04
MW-5	Grab	GW		01/30/08	1258	2	X		05
MW-6	Grab	GW		01/30/08	1251	2	X		06
MW-7	Grab	GW		01/30/08	1242	2	X		07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: DI Priority 9446 7859 3053

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Adam Gaines	01/31/08	1530			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.1°C / Bottles Received: 14 + TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2/1/08 / Time: 0900	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Wednesday February 06, 2008

Report Number: L330006
Samples Received: 02/01/08
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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2 Samples Reported: 02/05/08 17:59 Revised: 02/06/08 09:44

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 06, 2008

ESC Sample # : L330006-01

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 13:48

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	240	2.9	10.	ug/l		8260B	02/04/08	10
Ethylbenzene	91.	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	4.7	0.31	1.	ug/l		8260B	02/03/08	1
Methyl tert-butyl ether	40.	0.19	1.0	ug/l		8260B	02/03/08	1
Naphthalene	39.	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	58.	0.32	5.	ug/l		8260B	02/03/08	1
Total Xylenes	560	7.3	30	ug/l		8260B	02/04/08	10
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	105.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	99.7			% Rec.		8260B	02/03/08	1

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 06, 2008

ESC Sample # : L330006-02

Date Received : February 01, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/30/08 13:40

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	450	2.9	10.	ug/l		8260B	02/04/08	10
Ethylbenzene	62.	0.22	1.0	ug/l		8260B	02/03/08	1
Isopropylbenzene	17.	0.31	1.	ug/l		8260B	02/03/08	1
Methyl tert-butyl ether	210	1.9	10.	ug/l		8260B	02/04/08	10
Naphthalene	22.	0.17	5.0	ug/l		8260B	02/03/08	1
Toluene	9.2	0.32	5.	ug/l		8260B	02/03/08	1
Total Xylenes	25.	0.73	3.	ug/l		8260B	02/03/08	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/03/08	1
Dibromofluoromethane	106.			% Rec.		8260B	02/03/08	1
4-Bromofluorobenzene	96.8			% Rec.		8260B	02/03/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mLAMB - HCl							Remarks/Contaminant	Sample # (lab only)
EW-1	Grab	GW		01/30/08	1348	2	X								L330006-01
EW-3	Grab	GW		01/30/08	1340	2	X								02

Chain of Custody Page 1 of 1

Prepared by:

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Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other _____

pH _____ Temp _____

Remarks: DI Priority 9446 7855 3053

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Adam Gaines	01/31/08	1530	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 4.7°C

Bottles Received: 4V

Date: 2/1/08

Time: 0900

Condition: (lab use only)

pH Checked:

NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Monday April 28, 2008

Report Number: L341559
Samples Received: 04/18/08
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-01

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:31

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1200	72.	250	ug/l		8260B	04/24/08	250
Ethylbenzene	2200	56.	250	ug/l		8260B	04/24/08	250
Isopropylbenzene	150	77.	250	ug/l	J	8260B	04/24/08	250
Methyl tert-butyl ether	U	48.	250	ug/l		8260B	04/24/08	250
Naphthalene	640	42.	1300	ug/l	J	8260B	04/24/08	250
Toluene	790	80	1250	ug/l	J	8260B	04/24/08	250
Total Xylenes	8400	180	750	ug/l		8260B	04/24/08	250
Surrogate Recovery								
Toluene-d8	93.7			% Rec.		8260B	04/24/08	250
Dibromofluoromethane	91.1			% Rec.		8260B	04/24/08	250
4-Bromofluorobenzene	100.			% Rec.		8260B	04/24/08	250

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-02

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2100	5.8	20.	ug/l		8260B	04/21/08	20
Ethylbenzene	700	4.4	20.	ug/l		8260B	04/21/08	20
Isopropylbenzene	190	0.31	1.	ug/l		8260B	04/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/19/08	1
Naphthalene	130	0.17	5.0	ug/l		8260B	04/19/08	1
Toluene	910	6.4	100	ug/l		8260B	04/21/08	20
Total Xylenes	2000	14.	60	ug/l		8260B	04/21/08	20
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	04/19/08	1
Dibromofluoromethane	102.			% Rec.		8260B	04/19/08	1
4-Bromofluorobenzene	108.			% Rec.		8260B	04/19/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-03

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:19

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	180	1.4	5.0	ug/l		8260B	04/21/08	5
Ethylbenzene	U	1.1	5.0	ug/l		8260B	04/21/08	5
Isopropylbenzene	4.2	1.5	5.	ug/l	J	8260B	04/21/08	5
Methyl tert-butyl ether	3.7	0.96	5.0	ug/l	J	8260B	04/21/08	5
Naphthalene	17.	0.84	25.	ug/l	J	8260B	04/21/08	5
Toluene	3.5	1.6	25.	ug/l	J	8260B	04/21/08	5
Total Xylenes	4.4	3.6	15.	ug/l	J	8260B	04/21/08	5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	04/21/08	5
Dibromofluoromethane	97.9			% Rec.		8260B	04/21/08	5
4-Bromofluorobenzene	101.			% Rec.		8260B	04/21/08	5

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-04

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:13

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	0.57	0.29	1.0	ug/l	J	8260B	04/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/19/08	1
Methyl tert-butyl ether	0.50	0.19	1.0	ug/l	J	8260B	04/19/08	1
Naphthalene	0.76	0.17	5.0	ug/l	J	8260B	04/19/08	1
Toluene	0.33	0.32	5.	ug/l	J	8260B	04/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/19/08	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	04/19/08	1
Dibromofluoromethane	101.			% Rec.		8260B	04/19/08	1
4-Bromofluorobenzene	103.			% Rec.		8260B	04/19/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-05

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:52

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/19/08	1
Naphthalene	0.32	0.17	5.0	ug/l	J	8260B	04/19/08	1
Toluene	U	0.32	5.	ug/l		8260B	04/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/19/08	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	04/19/08	1
Dibromofluoromethane	99.3			% Rec.		8260B	04/19/08	1
4-Bromofluorobenzene	108.			% Rec.		8260B	04/19/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
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Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-06

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:37

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/19/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/19/08	1
Toluene	U	0.32	5.	ug/l		8260B	04/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/19/08	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	04/19/08	1
Dibromofluoromethane	101.			% Rec.		8260B	04/19/08	1
4-Bromofluorobenzene	103.			% Rec.		8260B	04/19/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 28, 2008

ESC Sample # : L341559-07

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Gaines-Mueller
Collection Date : 04/15/08 13:20

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/19/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/19/08	1
Toluene	U	0.32	5.	ug/l		8260B	04/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/19/08	1
Surrogate Recovery								
Toluene-d8	99.9			% Rec.		8260B	04/19/08	1
Dibromofluoromethane	101.			% Rec.		8260B	04/19/08	1
4-Bromofluorobenzene	103.			% Rec.		8260B	04/19/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L341559-01	Isopropylbenzene	J
	Naphthalene	J
	Toluene	J
L341559-03	Isopropylbenzene	J
	Methyl tert-butyl ether	J
	Naphthalene	J
	Toluene	J
	Total Xylenes	J
L341559-04	Benzene	J
	Methyl tert-butyl ether	J
	Naphthalene	J
	Toluene	J
L341559-05	Naphthalene	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Gaines and Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice: N YX

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40mlAmb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		04/15/08	1331	2	X		L341559-01
MW-2	Grab	GW		04/15/08	1325	2	X		L341559-02
MW-3	Grab	GW		04/15/08	1319	2	X		-03
MW-4	Grab	GW		04/15/08	1313	2	X		-04
MW-5	Grab	GW		04/15/08	1352	2	X		-05
MW-6	Grab	GW		04/15/08	1337	2	X		-06
MW-7	Grab	GW		04/15/08	1320	2	X		-07

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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CoCode: (lab use only)
Template/Prelogin
Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH _____ Temp _____

Remarks: D1 Priority 9446 7665 7632

Flow _____ Other _____

	Date:	Time:				
Relinquished by: (Signature)	4/17/08	1335	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐		Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1	Bottles Received: 14+1TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 4-18-08	Time: 9:00	pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Friday April 25, 2008

Report Number: L341567
Samples Received: 04/18/08
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 25, 2008

ESC Sample # : L341567-01

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Gaines-Meuller
Collection Date : 04/15/08 12:41

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	170	0.29	1.0	ug/l		8260B	04/19/08	1
Ethylbenzene	87.	0.22	1.0	ug/l		8260B	04/19/08	1
Isopropylbenzene	6.4	0.31	1.	ug/l		8260B	04/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/19/08	1
Naphthalene	48.	0.17	5.0	ug/l	J3	8260B	04/19/08	1
Toluene	35.	0.32	5.	ug/l		8260B	04/19/08	1
Total Xylenes	620	0.73	3.	ug/l	E	8260B	04/19/08	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	04/19/08	1
Dibromofluoromethane	100.			% Rec.		8260B	04/19/08	1
4-Bromofluorobenzene	103.			% Rec.		8260B	04/19/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 25, 2008

ESC Sample # : L341567-02

Date Received : April 18, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Gaines-Meuller
Collection Date : 04/15/08 13:03

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	170	1.4	5.0	ug/l		8260B	04/22/08	5
Ethylbenzene	19.	1.1	5.0	ug/l		8260B	04/22/08	5
Isopropylbenzene	10	1.5	5.	ug/l		8260B	04/22/08	5
Methyl tert-butyl ether	54.	0.96	5.0	ug/l		8260B	04/22/08	5
Naphthalene	18.	0.84	25.	ug/l	J	8260B	04/22/08	5
Toluene	5.7	1.6	25.	ug/l	J	8260B	04/22/08	5
Total Xylenes	15.	3.6	15.	ug/l	J	8260B	04/22/08	5
Surrogate Recovery								
Toluene-d8	96.6			% Rec.		8260B	04/22/08	5
Dibromofluoromethane	96.1			% Rec.		8260B	04/22/08	5
4-Bromofluorobenzene	101.			% Rec.		8260B	04/22/08	5

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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L341567-01	Naphthalene	J3
	Total Xylenes	E
L341567-02	Naphthalene	J
	Toluene	J
	Total Xylenes	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Gaines and Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40ml Amb - HCl	Remarks/Contaminant	Sample # (lab only)
EW-1	Grab	GW		04/15/08	1241	2	X		134156901
EW-3	Grab	GW		04/15/08	1303	2	X		-02

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

9406 7965 7632

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
	4/17/08	1335			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1° / Bottles Received: 4+1TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 4-18-08 / Time: 9100	pH Checked: / NCF:

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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Monday July 21, 2008

Report Number: L354713
Samples Received: 07/11/08
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-01

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 14:39

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2600	140	500	ug/l		8260B	07/15/08	500
Ethylbenzene	1400	110	500	ug/l		8260B	07/15/08	500
Isopropylbenzene	U	150	500	ug/l		8260B	07/15/08	500
Methyl tert-butyl ether	570	96.	500	ug/l		8260B	07/15/08	500
Naphthalene	550	84.	2500	ug/l	J	8260B	07/15/08	500
Toluene	770	160	2500	ug/l	J	8260B	07/15/08	500
Total Xylenes	4300	360	1500	ug/l		8260B	07/15/08	500
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	07/15/08	500
Dibromofluoromethane	97.5			% Rec.		8260B	07/15/08	500
4-Bromofluorobenzene	94.9			% Rec.		8260B	07/15/08	500

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-02

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 14:33

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	4700	72.	250	ug/l		8260B	07/15/08	250
Ethylbenzene	1100	56.	250	ug/l		8260B	07/15/08	250
Isopropylbenzene	200	77.	250	ug/l	J	8260B	07/15/08	250
Methyl tert-butyl ether	54.	48.	250	ug/l	J	8260B	07/15/08	250
Naphthalene	210	42.	1300	ug/l	J	8260B	07/15/08	250
Toluene	1900	80	1250	ug/l		8260B	07/15/08	250
Total Xylenes	3100	180	750	ug/l		8260B	07/15/08	250
Surrogate Recovery								
Toluene-d8	99.7			% Rec.		8260B	07/15/08	250
Dibromofluoromethane	99.7			% Rec.		8260B	07/15/08	250
4-Bromofluorobenzene	89.9			% Rec.		8260B	07/15/08	250

U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-03

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 14:26

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	90.	0.29	1.0	ug/l		8260B	07/15/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/15/08	1
Isopropylbenzene	4.1	0.31	1.	ug/l		8260B	07/15/08	1
Methyl tert-butyl ether	9.1	0.19	1.0	ug/l		8260B	07/15/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/15/08	1
Toluene	2.9	0.32	5.	ug/l	J	8260B	07/15/08	1
Total Xylenes	1.9	0.73	3.	ug/l	J	8260B	07/15/08	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/15/08	1
Dibromofluoromethane	107.			% Rec.		8260B	07/15/08	1
4-Bromofluorobenzene	92.6			% Rec.		8260B	07/15/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-04

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 14:20

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/15/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/15/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/15/08	1
Methyl tert-butyl ether	6.2	0.19	1.0	ug/l		8260B	07/15/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/15/08	1
Toluene	U	0.32	5.	ug/l		8260B	07/15/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/15/08	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	07/15/08	1
Dibromofluoromethane	104.			% Rec.		8260B	07/15/08	1
4-Bromofluorobenzene	95.7			% Rec.		8260B	07/15/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-05

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 14:04

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/15/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/15/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/15/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	07/15/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/15/08	1
Toluene	U	0.32	5.	ug/l		8260B	07/15/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/15/08	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	07/15/08	1
Dibromofluoromethane	105.			% Rec.		8260B	07/15/08	1
4-Bromofluorobenzene	89.2			% Rec.		8260B	07/15/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Fax (615) 758-5859

Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-06

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 14:12

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/15/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/15/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/15/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	07/15/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/15/08	1
Toluene	U	0.32	5.	ug/l		8260B	07/15/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/15/08	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/15/08	1
Dibromofluoromethane	101.			% Rec.		8260B	07/15/08	1
4-Bromofluorobenzene	89.7			% Rec.		8260B	07/15/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 07/21/08 10:29 Printed: 07/21/08 10:29

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 21, 2008

ESC Sample # : L354713-07

Date Received : July 11, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/08 13:55

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/15/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/15/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/15/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	07/15/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/15/08	1
Toluene	U	0.32	5.	ug/l		8260B	07/15/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/15/08	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	07/15/08	1
Dibromofluoromethane	89.4			% Rec.		8260B	07/15/08	1
4-Bromofluorobenzene	84.2			% Rec.		8260B	07/15/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Reported: 07/21/08 10:29 Printed: 07/21/08 10:29

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L354713-01	Naphthalene	J
	Toluene	J
L354713-02	Isopropylbenzene	J
	Methyl tert-butyl ether	J
	Naphthalene	J
L354713-03	Toluene	J
	Total Xylenes	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Adam Gaines

Packed on Ice N Y ○

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

v8260 BTEXMNI - 40 mLAMB - HCl

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs		Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		07/07/08	1439	2	X		1354713-01
MW-2	Grab	GW		07/07/08	1433	2	X		02
MW-3	Grab	GW		07/07/08	1426	2	X		03
MW-4	Grab	GW		07/07/08	1420	2	X		04
MW-5	Grab	GW		07/07/08	1404	2	X		05
MW-6	Grab	GW		07/07/08	1412	2	X		06
MW-7	Grab	GW		07/07/08	1355	2	X		07

Chain of Custody
Page 1 of 1

Prepared by:

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Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D/ Priority

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Adam Gaines	07/10/08	1530			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.1°C / Bottles Received: 14/V	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/11/08 / Time: 09:00	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Wednesday October 22, 2008

Report Number: L370546
Samples Received: 10/17/08
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided
in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-01

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 13:04

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1500	140	500	ug/l		8260B	10/21/08	500
Ethylbenzene	2600	110	500	ug/l		8260B	10/21/08	500
Isopropylbenzene	320	150	500	ug/l	J	8260B	10/21/08	500
Methyl tert-butyl ether	280	96.	500	ug/l	J	8260B	10/21/08	500
Naphthalene	1800	84.	2500	ug/l	J	8260B	10/21/08	500
Toluene	530	160	2500	ug/l	J	8260B	10/21/08	500
Total Xylenes	7700	360	1500	ug/l		8260B	10/21/08	500
Surrogate Recovery								
Toluene-d8	97.2			% Rec.		8260B	10/21/08	500
Dibromofluoromethane	92.8			% Rec.		8260B	10/21/08	500
4-Bromofluorobenzene	112.			% Rec.		8260B	10/21/08	500

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-02

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 12:59

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1800	2.9	10.	ug/l		8260B	10/20/08	10
Ethylbenzene	290	2.2	10.	ug/l		8260B	10/20/08	10
Isopropylbenzene	79.	3.1	10	ug/l		8260B	10/20/08	10
Methyl tert-butyl ether	U	1.9	10.	ug/l		8260B	10/20/08	10
Naphthalene	44.	1.7	50.	ug/l	J	8260B	10/20/08	10
Toluene	260	3.2	50	ug/l		8260B	10/20/08	10
Total Xylenes	790	7.3	30	ug/l		8260B	10/20/08	10
Surrogate Recovery								
Toluene-d8	92.8			% Rec.		8260B	10/20/08	10
Dibromofluoromethane	94.5			% Rec.		8260B	10/20/08	10
4-Bromofluorobenzene	104.			% Rec.		8260B	10/20/08	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-03

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 12:52

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	7.5	0.29	1.0	ug/l		8260B	10/20/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	10/20/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	10/20/08	1
Methyl tert-butyl ether	9.2	0.19	1.0	ug/l		8260B	10/20/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	10/20/08	1
Toluene	U	0.32	5.	ug/l		8260B	10/20/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	10/20/08	1
Surrogate Recovery								
Toluene-d8	90.7			% Rec.		8260B	10/20/08	1
Dibromofluoromethane	93.2			% Rec.		8260B	10/20/08	1
4-Bromofluorobenzene	103.			% Rec.		8260B	10/20/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-04

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 12:47

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1.8	0.29	1.0	ug/l		8260B	10/20/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	10/20/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	10/20/08	1
Methyl tert-butyl ether	4.8	0.19	1.0	ug/l		8260B	10/20/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	10/20/08	1
Toluene	U	0.32	5.	ug/l		8260B	10/20/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	10/20/08	1
Surrogate Recovery								
Toluene-d8	91.7			% Rec.		8260B	10/20/08	1
Dibromofluoromethane	93.2			% Rec.		8260B	10/20/08	1
4-Bromofluorobenzene	105.			% Rec.		8260B	10/20/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-05

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 12:40

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	10/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	10/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	10/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J4	8260B	10/19/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	10/19/08	1
Toluene	U	0.32	5.	ug/l		8260B	10/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	10/19/08	1
Surrogate Recovery								
Toluene-d8	97.2			% Rec.		8260B	10/19/08	1
Dibromofluoromethane	106.			% Rec.		8260B	10/19/08	1
4-Bromofluorobenzene	88.8			% Rec.		8260B	10/19/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-06

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 12:34

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	10/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	10/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	10/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J4	8260B	10/19/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	10/19/08	1
Toluene	U	0.32	5.	ug/l		8260B	10/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	10/19/08	1
Surrogate Recovery								
Toluene-d8	97.2			% Rec.		8260B	10/19/08	1
Dibromofluoromethane	102.			% Rec.		8260B	10/19/08	1
4-Bromofluorobenzene	90.1			% Rec.		8260B	10/19/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-07

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 12:25

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	10/19/08	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	10/19/08	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	10/19/08	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l	J4	8260B	10/19/08	1
Naphthalene	U	0.17	5.0	ug/l		8260B	10/19/08	1
Toluene	U	0.32	5.	ug/l		8260B	10/19/08	1
Total Xylenes	U	0.73	3.	ug/l		8260B	10/19/08	1
Surrogate Recovery								
Toluene-d8	96.5			% Rec.		8260B	10/19/08	1
Dibromofluoromethane	104.			% Rec.		8260B	10/19/08	1
4-Bromofluorobenzene	89.8			% Rec.		8260B	10/19/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-08

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 13:18

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	89.	0.29	1.0	ug/l		8260B	10/19/08	1
Ethylbenzene	48.	0.22	1.0	ug/l		8260B	10/19/08	1
Isopropylbenzene	3.3	0.31	1.	ug/l		8260B	10/19/08	1
Methyl tert-butyl ether	35.	0.19	1.0	ug/l		8260B	10/19/08	1
Naphthalene	23.	0.17	5.0	ug/l		8260B	10/19/08	1
Toluene	16.	0.32	5.	ug/l		8260B	10/19/08	1
Total Xylenes	260	0.73	3.	ug/l		8260B	10/19/08	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	10/19/08	1
Dibromofluoromethane	99.7			% Rec.		8260B	10/19/08	1
4-Bromofluorobenzene	97.8			% Rec.		8260B	10/19/08	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

October 22, 2008

ESC Sample # : L370546-09

Date Received : October 17, 2008
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/14/08 13:11

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	140	0.29	1.0	ug/l		8260B	10/19/08	1
Ethylbenzene	6.2	0.22	1.0	ug/l		8260B	10/19/08	1
Isopropylbenzene	8.7	0.31	1.	ug/l		8260B	10/19/08	1
Methyl tert-butyl ether	60.	0.19	1.0	ug/l		8260B	10/19/08	1
Naphthalene	5.9	0.17	5.0	ug/l		8260B	10/19/08	1
Toluene	3.8	0.32	5.	ug/l	J	8260B	10/19/08	1
Total Xylenes	8.7	0.73	3.	ug/l		8260B	10/19/08	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	10/19/08	1
Dibromofluoromethane	97.9			% Rec.		8260B	10/19/08	1
4-Bromofluorobenzene	96.9			% Rec.		8260B	10/19/08	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L370546-01	WG389741	SAMP	Isopropylbenzene	R510684	J
	WG389741	SAMP	Methyl tert-butyl ether	R510684	J
	WG389741	SAMP	Naphthalene	R510684	J
	WG389741	SAMP	Toluene	R510684	J
L370546-02	WG389486	SAMP	Naphthalene	R508385	J
L370546-05	WG389461	SAMP	Methyl tert-butyl ether	R508669	J4
L370546-06	WG389461	SAMP	Methyl tert-butyl ether	R508669	J4
L370546-07	WG389461	SAMP	Methyl tert-butyl ether	R508669	J4
L370546-09	WG389465	SAMP	Toluene	R510044	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

v8260 BTEXMNI - 40 mL Amb - HCl

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		10/14/08	1304	2	X		L370546-01
MW-2	Grab	GW		10/14/08	1259	2	X		02
MW-3	Grab	GW		10/14/08	1252	2	X		03
MW-4	Grab	GW		10/14/08	1247	2	X		04
MW-5	Grab	GW		10/14/08	1240	2	X		05
MW-6	Grab	GW		10/14/08	1234	2	X		06
MW-7	Grab	GW		10/14/08	1225	2	X		07
EW-1	Grab	GW		10/14/08	1318	2	X		08
EW-3	Grab	GW		10/14/08	1311	2	X		09

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Phone (800) 767-5859
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CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority 8682 1732 6567

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	10/16/08	1545	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 2.5°C

Bottles Received: 18→16

Condition: (lab use only) OK

Date: 10/17/08

Time: 0900

pH Checked:

NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Monday February 02, 2009

Report Number: L385218
Samples Received: 01/27/09
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

7 Samples Reported: 01/31/09 17:09 Revised: 02/02/09 08:56

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 02, 2009

ESC Sample # : L385218-01

Date Received : January 27, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 14:34

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1800	14.	50.	ug/l		8260B	01/30/09	50
Ethylbenzene	2000	11.	50.	ug/l		8260B	01/30/09	50
Isopropylbenzene	98.	15.	50	ug/l		8260B	01/30/09	50
Methyl tert-butyl ether	200	9.6	50.	ug/l		8260B	01/30/09	50
Naphthalene	510	8.4	250	ug/l		8260B	01/30/09	50
Toluene	510	16.	250	ug/l		8260B	01/30/09	50
Total Xylenes	6400	36.	150	ug/l		8260B	01/30/09	50
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	01/30/09	50
Dibromofluoromethane	105.			% Rec.		8260B	01/30/09	50
4-Bromofluorobenzene	105.			% Rec.		8260B	01/30/09	50

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

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Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 02, 2009

ESC Sample # : L385218-02

Date Received : January 27, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 14:42

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	3300	14.	50.	ug/l		8260B	01/29/09	50
Ethylbenzene	830	11.	50.	ug/l		8260B	01/29/09	50
Isopropylbenzene	140	15.	50	ug/l		8260B	01/29/09	50
Methyl tert-butyl ether	23.	9.6	50.	ug/l	J	8260B	01/29/09	50
Naphthalene	120	8.4	250	ug/l	J	8260B	01/29/09	50
Toluene	1300	16.	250	ug/l		8260B	01/29/09	50
Total Xylenes	2600	36.	150	ug/l		8260B	01/29/09	50
Surrogate Recovery								
Toluene-d8	96.8			% Rec.		8260B	01/29/09	50
Dibromofluoromethane	103.			% Rec.		8260B	01/29/09	50
4-Bromofluorobenzene	110.			% Rec.		8260B	01/29/09	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 02, 2009

ESC Sample # : L385218-03

Date Received : January 27, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 14:28

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	44.	0.29	1.0	ug/l		8260B	01/28/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	01/28/09	1
Isopropylbenzene	1.3	0.31	1.	ug/l		8260B	01/28/09	1
Methyl tert-butyl ether	6.9	0.19	1.0	ug/l		8260B	01/28/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	01/28/09	1
Toluene	0.98	0.32	5.	ug/l	J	8260B	01/28/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	01/28/09	1
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	01/28/09	1
Dibromofluoromethane	109.			% Rec.		8260B	01/28/09	1
4-Bromofluorobenzene	110.			% Rec.		8260B	01/28/09	1

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 02, 2009

ESC Sample # : L385218-04

Date Received : January 27, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 14:22

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	01/30/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	01/30/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	01/30/09	1
Methyl tert-butyl ether	1.5	0.19	1.0	ug/l		8260B	01/30/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	01/30/09	1
Toluene	U	0.32	5.	ug/l		8260B	01/30/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	01/30/09	1
Surrogate Recovery								
Toluene-d8	97.4			% Rec.		8260B	01/30/09	1
Dibromofluoromethane	111.			% Rec.		8260B	01/30/09	1
4-Bromofluorobenzene	106.			% Rec.		8260B	01/30/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
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February 02, 2009

ESC Sample # : L385218-05

Date Received : January 27, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 14:13

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	01/30/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	01/30/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	01/30/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	01/30/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	01/30/09	1
Toluene	U	0.32	5.	ug/l		8260B	01/30/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	01/30/09	1
Surrogate Recovery								
Toluene-d8	97.8			% Rec.		8260B	01/30/09	1
Dibromofluoromethane	111.			% Rec.		8260B	01/30/09	1
4-Bromofluorobenzene	104.			% Rec.		8260B	01/30/09	1

U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
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Sharon, PA 16146-1165

February 02, 2009

ESC Sample # : L385218-06

Date Received : January 27, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 14:06

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	01/28/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	01/28/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	01/28/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	01/28/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	01/28/09	1
Toluene	U	0.32	5.	ug/l		8260B	01/28/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	01/28/09	1
Surrogate Recovery								
Toluene-d8	99.7			% Rec.		8260B	01/28/09	1
Dibromofluoromethane	106.			% Rec.		8260B	01/28/09	1
4-Bromofluorobenzene	98.4			% Rec.		8260B	01/28/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

February 02, 2009

ESC Sample # : L385218-07

Date Received : January 27, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 01/21/09 13:57

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	01/29/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	01/29/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	01/29/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	01/29/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	01/29/09	1
Toluene	U	0.32	5.	ug/l		8260B	01/29/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	01/29/09	1
Surrogate Recovery								
Toluene-d8	97.9			% Rec.		8260B	01/29/09	1
Dibromofluoromethane	113.			% Rec.		8260B	01/29/09	1
4-Bromofluorobenzene	104.			% Rec.		8260B	01/29/09	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L385218-02	WG404536	SAMP	Methyl tert-butyl ether	R609306	J
	WG404536	SAMP	Naphthalene	R609306	J
L385218-03	WG404536	SAMP	Toluene	R609306	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mLAMB - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		01/21/09	1434	2	X		L38528-01
MW-2	Grab	GW		01/21/09	1442	2	X		02
MW-3	Grab	GW		01/21/09	1428	2	X		03
MW-4	Grab	GW		01/21/09	1422	2	X		04
MW-5	Grab	GW		01/21/09	1413	2	X		05
MW-6	Grab	GW		01/21/09	1406	2	X		06
MW-7	Grab	GW		01/21/09	1357	2	X		07

Chain of Custody
Page 1 of 1

Prepared by:

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A101

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: DI Priority

9632 0249 0697

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐	Condition: (lab use only)
	1/26/09	1115			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 5.8°C / Bottles Received: 14+TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/27/09 / Time: 0900	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Wednesday April 22, 2009

Report Number: L398322
Samples Received: 04/17/09
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-01

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:56

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1500	14.	50.	ug/l		8260B	04/21/09	50
Ethylbenzene	2200	11.	50.	ug/l		8260B	04/21/09	50
Isopropylbenzene	160	15.	50	ug/l		8260B	04/21/09	50
Methyl tert-butyl ether	U	9.6	50.	ug/l		8260B	04/21/09	50
Naphthalene	860	8.4	250	ug/l		8260B	04/21/09	50
Toluene	560	16.	250	ug/l		8260B	04/21/09	50
Total Xylenes	8200	36.	150	ug/l		8260B	04/21/09	50
Surrogate Recovery								
Toluene-d8	110.			% Rec.		8260B	04/21/09	50
Dibromofluoromethane	108.			% Rec.		8260B	04/21/09	50
4-Bromofluorobenzene	99.0			% Rec.		8260B	04/21/09	50

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-02

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:51

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2700	14.	50.	ug/l		8260B	04/18/09	50
Ethylbenzene	800	11.	50.	ug/l		8260B	04/18/09	50
Isopropylbenzene	160	15.	50	ug/l		8260B	04/18/09	50
Methyl tert-butyl ether	13.	9.6	50.	ug/l	J	8260B	04/18/09	50
Naphthalene	150	8.4	250	ug/l	J	8260B	04/18/09	50
Toluene	1300	16.	250	ug/l		8260B	04/18/09	50
Total Xylenes	2400	36.	150	ug/l		8260B	04/18/09	50
Surrogate Recovery								
Toluene-d8	98.2			% Rec.		8260B	04/18/09	50
Dibromofluoromethane	102.			% Rec.		8260B	04/18/09	50
4-Bromofluorobenzene	101.			% Rec.		8260B	04/18/09	50

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-03

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:44

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	44.	0.29	1.0	ug/l		8260B	04/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/18/09	1
Isopropylbenzene	1.9	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	7.5	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/18/09	1
Toluene	1.4	0.32	5.	ug/l	J	8260B	04/18/09	1
Total Xylenes	1.1	0.73	3.	ug/l	J	8260B	04/18/09	1
Surrogate Recovery								
Toluene-d8	98.3			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	103.			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	94.9			% Rec.		8260B	04/18/09	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-04

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:36

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	2.4	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	04/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/18/09	1
Surrogate Recovery								
Toluene-d8	96.6			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	107.			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	100.			% Rec.		8260B	04/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-05

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:29

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	04/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/18/09	1
Surrogate Recovery								
Toluene-d8	99.9			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	105.			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	101.			% Rec.		8260B	04/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-06

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:23

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	04/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/18/09	1
Surrogate Recovery								
Toluene-d8	99.4			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	105.			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	101.			% Rec.		8260B	04/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-07

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 13:15

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	04/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	04/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	04/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	04/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/18/09	1
Surrogate Recovery								
Toluene-d8	98.0			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	105.			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	96.3			% Rec.		8260B	04/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-08

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 14:12

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	390	2.9	10.	ug/l		8260B	04/20/09	10
Ethylbenzene	390	2.2	10.	ug/l		8260B	04/20/09	10
Isopropylbenzene	14.	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	34.	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	120	0.17	5.0	ug/l		8260B	04/18/09	1
Toluene	100	0.32	5.	ug/l		8260B	04/18/09	1
Total Xylenes	1800	7.3	30	ug/l		8260B	04/20/09	10
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	97.2			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	95.8			% Rec.		8260B	04/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 22, 2009

ESC Sample # : L398322-09

Date Received : April 17, 2009
Description : Groundwater

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 04/14/09 14:04

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	180	0.29	1.0	ug/l		8260B	04/18/09	1
Ethylbenzene	9.4	0.22	1.0	ug/l		8260B	04/20/09	1
Isopropylbenzene	6.8	0.31	1.	ug/l		8260B	04/18/09	1
Methyl tert-butyl ether	35.	0.19	1.0	ug/l		8260B	04/18/09	1
Naphthalene	4.7	0.17	5.0	ug/l	J	8260B	04/18/09	1
Toluene	8.8	0.32	5.	ug/l		8260B	04/18/09	1
Total Xylenes	15.	0.73	3.	ug/l		8260B	04/20/09	1
Surrogate Recovery								
Toluene-d8	99.2			% Rec.		8260B	04/18/09	1
Dibromofluoromethane	99.1			% Rec.		8260B	04/18/09	1
4-Bromofluorobenzene	96.3			% Rec.		8260B	04/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L398322-02	WG417560	SAMP	Methyl tert-butyl ether	R714306	J
	WG417560	SAMP	Naphthalene	R714306	J
L398322-03	WG417560	SAMP	Toluene	R714306	J
	WG417560	SAMP	Total Xylenes	R714306	J
L398322-09	WG417560	SAMP	Naphthalene	R714306	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Groundwater

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		04/14/09	1356	2	X		L358322-01
MW-2	Grab	GW		04/14/09	1351	2	X		02
MW-3	Grab	GW		04/14/09	1344	2	X		03
MW-4	Grab	GW		04/14/09	1336	2	X		04
MW-5	Grab	GW		04/14/09	1329	2	X		05
MW-6	Grab	GW		04/14/09	1323	2	X		06
MW-7	Grab	GW		04/14/09	1315	2	X		07
EW-1	Grab	GW		04/14/09	1412	2	X		08
EW-3	Grab	GW		04/14/09	1404	2	X		09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: DI Priority

9446 7879 0391

Flow _____ Other _____

Chain of Custody Page 1 of 1

Prepared by:

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C118

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐		Condition: (lab use only)	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4°C	Bottles Received: 18		
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 4/11/09	Time: 0900	pH Checked:	NCF:
	4/10/09	1315					

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Sunday July 19, 2009

Report Number: L411807
Samples Received: 07/10/09
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-01

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:47

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	3000	14.	50.	ug/l		8260B	07/18/09	50
Ethylbenzene	880	11.	50.	ug/l		8260B	07/18/09	50
Isopropylbenzene	150	15.	50	ug/l		8260B	07/18/09	50
Methyl tert-butyl ether	14.	9.6	50.	ug/l	J	8260B	07/18/09	50
Naphthalene	110	8.4	250	ug/l	J	8260B	07/18/09	50
Toluene	1700	16.	250	ug/l		8260B	07/18/09	50
Total Xylenes	3000	36.	150	ug/l		8260B	07/18/09	50
Surrogate Recovery								
Toluene-d8	99.3			% Rec.		8260B	07/18/09	50
Dibromofluoromethane	104.			% Rec.		8260B	07/18/09	50
4-Bromofluorobenzene	100.			% Rec.		8260B	07/18/09	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-02

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:41

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	3000	14.	50.	ug/l		8260B	07/18/09	50
Ethylbenzene	U	11.	50.	ug/l		8260B	07/18/09	50
Isopropylbenzene	170	15.	50	ug/l		8260B	07/18/09	50
Methyl tert-butyl ether	390	9.6	50.	ug/l		8260B	07/18/09	50
Naphthalene	12.	8.4	250	ug/l	J	8260B	07/18/09	50
Toluene	110	16.	250	ug/l	J	8260B	07/18/09	50
Total Xylenes	91.	36.	150	ug/l	J	8260B	07/18/09	50
Surrogate Recovery								
Toluene-d8	99.2			% Rec.		8260B	07/18/09	50
Dibromofluoromethane	107.			% Rec.		8260B	07/18/09	50
4-Bromofluorobenzene	99.3			% Rec.		8260B	07/18/09	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-03

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:35

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	15.	0.29	1.0	ug/l	J5	8260B	07/18/09	1
Ethylbenzene	15.	0.22	1.0	ug/l		8260B	07/18/09	1
Isopropylbenzene	1.9	0.31	1.	ug/l		8260B	07/18/09	1
Methyl tert-butyl ether	0.73	0.19	1.0	ug/l	J	8260B	07/18/09	1
Naphthalene	4.8	0.17	5.0	ug/l	J	8260B	07/18/09	1
Toluene	3.8	0.32	5.	ug/l	J	8260B	07/18/09	1
Total Xylenes	14.	0.73	3.	ug/l		8260B	07/18/09	1
Surrogate Recovery								
Toluene-d8	98.7			% Rec.		8260B	07/18/09	1
Dibromofluoromethane	108.			% Rec.		8260B	07/18/09	1
4-Bromofluorobenzene	101.			% Rec.		8260B	07/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-04

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:29

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	0.55	0.29	1.0	ug/l	J	8260B	07/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/18/09	1
Methyl tert-butyl ether	16.	0.19	1.0	ug/l		8260B	07/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	07/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/18/09	1
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	07/18/09	1
Dibromofluoromethane	107.			% Rec.		8260B	07/18/09	1
4-Bromofluorobenzene	99.0			% Rec.		8260B	07/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-05

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:22

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/18/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	07/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	07/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/18/09	1
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	07/18/09	1
Dibromofluoromethane	109.			% Rec.		8260B	07/18/09	1
4-Bromofluorobenzene	101.			% Rec.		8260B	07/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-06

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:14

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/18/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	07/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	07/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/18/09	1
Surrogate Recovery								
Toluene-d8	98.5			% Rec.		8260B	07/18/09	1
Dibromofluoromethane	108.			% Rec.		8260B	07/18/09	1
4-Bromofluorobenzene	98.0			% Rec.		8260B	07/18/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-07

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 13:06

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	07/18/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	07/18/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	07/18/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	07/18/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	07/18/09	1
Toluene	U	0.32	5.	ug/l		8260B	07/18/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	07/18/09	1
Surrogate Recovery								
Toluene-d8	99.8			% Rec.		8260B	07/18/09	1
Dibromofluoromethane	107.			% Rec.		8260B	07/18/09	1
4-Bromofluorobenzene	101.			% Rec.		8260B	07/18/09	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 19, 2009

ESC Sample # : L411807-08

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 12:49

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	250	2.9	10.	ug/l		8260B	07/18/09	10
Ethylbenzene	65.	2.2	10.	ug/l		8260B	07/18/09	10
Isopropylbenzene	4.6	3.1	10	ug/l	J	8260B	07/18/09	10
Methyl tert-butyl ether	45.	1.9	10.	ug/l		8260B	07/18/09	10
Naphthalene	13.	1.7	50.	ug/l	J	8260B	07/18/09	10
Toluene	23.	3.2	50	ug/l	J	8260B	07/18/09	10
Total Xylenes	280	7.3	30	ug/l		8260B	07/18/09	10
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	07/18/09	10
Dibromofluoromethane	106.			% Rec.		8260B	07/18/09	10
4-Bromofluorobenzene	102.			% Rec.		8260B	07/18/09	10

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REPORT OF ANALYSIS

Ms. Sara Giordano
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July 19, 2009

ESC Sample # : L411807-09

Date Received : July 10, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 07/07/09 12:57

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	160	0.29	1.0	ug/l		8260B	07/18/09	1
Ethylbenzene	9.1	0.22	1.0	ug/l		8260B	07/18/09	1
Isopropylbenzene	7.3	0.31	1.	ug/l		8260B	07/18/09	1
Methyl tert-butyl ether	13.	0.19	1.0	ug/l		8260B	07/18/09	1
Naphthalene	1.9	0.17	5.0	ug/l	J	8260B	07/18/09	1
Toluene	4.9	0.32	5.	ug/l	J	8260B	07/18/09	1
Total Xylenes	9.1	0.73	3.	ug/l		8260B	07/18/09	1
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	07/18/09	1
Dibromofluoromethane	105.			% Rec.		8260B	07/18/09	1
4-Bromofluorobenzene	95.5			% Rec.		8260B	07/18/09	1

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L411807-01	WG431971	SAMP	Methyl tert-butyl ether	R824728	J
	WG431971	SAMP	Naphthalene	R824728	J
L411807-02	WG431971	SAMP	Naphthalene	R824728	J
	WG431971	SAMP	Toluene	R824728	J
	WG431971	SAMP	Total Xylenes	R824728	J
L411807-03	WG431971	SAMP	Benzene	R824728	J5
	WG431971	SAMP	Methyl tert-butyl ether	R824728	J
	WG431971	SAMP	Naphthalene	R824728	J
	WG431971	SAMP	Toluene	R824728	J
L411807-04	WG431971	SAMP	Benzene	R824728	J
L411807-08	WG431971	SAMP	Isopropylbenzene	R824728	J
	WG431971	SAMP	Naphthalene	R824728	J
	WG431971	SAMP	Toluene	R824728	J
L411807-09	WG431971	SAMP	Naphthalene	R824728	J
	WG431971	SAMP	Toluene	R824728	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC.
Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano
Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring
City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street
ESC Key: INSITE-GW

Collected by: Adam Gaines
Site/Facility ID#: 03-07315
P.O.#:

Collected by (signature):
Packed on Ice N Y

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? ___No ✓Yes
FAX? ✓No ___Yes

Analysis/Container/Preservative
V8260BTEXMNI / 40ml Amb / HCl

Chain of Custody 1 of 1
G044

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CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40ml Amb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		07/07/09	1347	2	X		L471807-01
MW-2	Grab	GW		07/07/09	1341	2	X		-02
MW-3	Grab	GW		07/07/09	1335	2	X		-03
MW-4	Grab	GW		07/07/09	1329	2	X		-04
MW-5	Grab	GW		07/07/09	1322	2	X		-05
MW-6	Grab	GW		07/07/09	1314	2	X		-06
MW-7	Grab	GW		07/07/09	1306	2	X		-07
EW-1	Grab	GW		07/07/09	1249	2	X		-08
EW-3	Grab	GW		07/07/09	1257	2	X		-09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: DI Priority 9632 6846 7324

pH _____ Temp _____
Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	7/9/09	1630	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐

Temp:	Bottles Received:
3.2°	~~24~~ 18
Date: 7.10.09	Time: 0900

Condition: (lab use only) OK
pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Friday November 06, 2009

Report Number: L429799
Samples Received: 10/30/09
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided
in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-01

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 14:08

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1300	14.	50.	ug/l		8260B	11/01/09	50
Ethylbenzene	1400	11.	50.	ug/l		8260B	11/01/09	50
Isopropylbenzene	64.	15.	50	ug/l		8260B	11/01/09	50
Methyl tert-butyl ether	140	9.6	50.	ug/l		8260B	11/01/09	50
Naphthalene	390	8.4	250	ug/l		8260B	11/01/09	50
Toluene	370	16.	250	ug/l		8260B	11/01/09	50
Total Xylenes	4100	36.	150	ug/l		8260B	11/01/09	50
Surrogate Recovery								
Toluene-d8	92.3			% Rec.		8260B	11/01/09	50
Dibromofluoromethane	93.9			% Rec.		8260B	11/01/09	50
4-Bromofluorobenzene	92.5			% Rec.		8260B	11/01/09	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-02

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 14:03

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	2400	14.	50.	ug/l		8260B	11/01/09	50
Ethylbenzene	820	11.	50.	ug/l		8260B	11/01/09	50
Isopropylbenzene	130	15.	50	ug/l		8260B	11/01/09	50
Methyl tert-butyl ether	U	9.6	50.	ug/l		8260B	11/01/09	50
Naphthalene	280	8.4	250	ug/l		8260B	11/01/09	50
Toluene	1300	16.	250	ug/l		8260B	11/01/09	50
Total Xylenes	2600	36.	150	ug/l		8260B	11/01/09	50
Surrogate Recovery								
Toluene-d8	94.4			% Rec.		8260B	11/01/09	50
Dibromofluoromethane	92.6			% Rec.		8260B	11/01/09	50
4-Bromofluorobenzene	93.5			% Rec.		8260B	11/01/09	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-03

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:56

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	25.	0.29	1.0	ug/l		8260B	11/01/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	11/01/09	1
Isopropylbenzene	1.6	0.31	1.	ug/l		8260B	11/01/09	1
Methyl tert-butyl ether	10.	0.19	1.0	ug/l		8260B	11/01/09	1
Naphthalene	3.2	0.17	5.0	ug/l	J	8260B	11/01/09	1
Toluene	1.2	0.32	5.	ug/l	J	8260B	11/01/09	1
Total Xylenes	1.1	0.73	3.	ug/l	J	8260B	11/01/09	1
Surrogate Recovery								
Toluene-d8	92.4			% Rec.		8260B	11/01/09	1
Dibromofluoromethane	96.0			% Rec.		8260B	11/01/09	1
4-Bromofluorobenzene	94.0			% Rec.		8260B	11/01/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-04

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:51

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	0.73	0.29	1.0	ug/l	J	8260B	11/01/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	11/01/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	11/01/09	1
Methyl tert-butyl ether	10.	0.19	1.0	ug/l		8260B	11/01/09	1
Naphthalene	2.9	0.17	5.0	ug/l	J	8260B	11/01/09	1
Toluene	U	0.32	5.	ug/l		8260B	11/01/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	11/01/09	1
Surrogate Recovery								
Toluene-d8	93.5			% Rec.		8260B	11/01/09	1
Dibromofluoromethane	93.8			% Rec.		8260B	11/01/09	1
4-Bromofluorobenzene	93.2			% Rec.		8260B	11/01/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-05

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:43

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	11/01/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	11/01/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	11/01/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	11/01/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	11/01/09	1
Toluene	U	0.32	5.	ug/l		8260B	11/01/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	11/01/09	1
Surrogate Recovery								
Toluene-d8	96.0			% Rec.		8260B	11/01/09	1
Dibromofluoromethane	94.3			% Rec.		8260B	11/01/09	1
4-Bromofluorobenzene	92.1			% Rec.		8260B	11/01/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-06

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:36

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	11/04/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	11/04/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	11/04/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	11/04/09	1
Naphthalene	1.1	0.17	5.0	ug/l	J	8260B	11/04/09	1
Toluene	U	0.32	5.	ug/l		8260B	11/04/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	11/04/09	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	11/04/09	1
Dibromofluoromethane	104.			% Rec.		8260B	11/04/09	1
4-Bromofluorobenzene	95.9			% Rec.		8260B	11/04/09	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 06, 2009

ESC Sample # : L429799-07

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:30

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	11/04/09	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	11/04/09	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	11/04/09	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	11/04/09	1
Naphthalene	U	0.17	5.0	ug/l		8260B	11/04/09	1
Toluene	U	0.32	5.	ug/l		8260B	11/04/09	1
Total Xylenes	U	0.73	3.	ug/l		8260B	11/04/09	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	11/04/09	1
Dibromofluoromethane	105.			% Rec.		8260B	11/04/09	1
4-Bromofluorobenzene	95.7			% Rec.		8260B	11/04/09	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
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611 S. Irvine Avenue
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November 06, 2009

ESC Sample # : L429799-08

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:23

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	1600	5.8	20.	ug/l		8260B	11/04/09	20
Ethylbenzene	2100	11.	50.	ug/l		8260B	11/04/09	50
Isopropylbenzene	68.	6.2	20	ug/l		8260B	11/04/09	20
Methyl tert-butyl ether	120	3.9	20.	ug/l		8260B	11/04/09	20
Naphthalene	490	3.3	100	ug/l		8260B	11/04/09	20
Toluene	490	6.4	100	ug/l		8260B	11/04/09	20
Total Xylenes	7200	36.	150	ug/l		8260B	11/04/09	50
Surrogate Recovery								
Toluene-d8	98.8			% Rec.		8260B	11/04/09	20
Dibromofluoromethane	101.			% Rec.		8260B	11/04/09	20
4-Bromofluorobenzene	92.9			% Rec.		8260B	11/04/09	20

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RDL = Reported Detection Limit = LOQ = PQL = EQL
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November 06, 2009

ESC Sample # : L429799-09

Date Received : October 30, 2009
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/26/09 13:16

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzene	380	1.4	5.0	ug/l		8260B	11/04/09	5
Ethylbenzene	9.7	1.1	5.0	ug/l		8260B	11/04/09	5
Isopropylbenzene	11.	1.5	5.	ug/l		8260B	11/04/09	5
Methyl tert-butyl ether	15.	0.96	5.0	ug/l		8260B	11/04/09	5
Naphthalene	42.	0.84	25.	ug/l		8260B	11/04/09	5
Toluene	10	1.6	25.	ug/l	J	8260B	11/04/09	5
Total Xylenes	31.	3.6	15.	ug/l		8260B	11/04/09	5
Surrogate Recovery								
Toluene-d8	96.9			% Rec.		8260B	11/04/09	5
Dibromofluoromethane	102.			% Rec.		8260B	11/04/09	5
4-Bromofluorobenzene	95.2			% Rec.		8260B	11/04/09	5

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L429799-03	WG448607	SAMP	Naphthalene	R982789	J
	WG448607	SAMP	Toluene	R982789	J
	WG448607	SAMP	Total Xylenes	R982789	J
L429799-04	WG448607	SAMP	Benzene	R982789	J
	WG448607	SAMP	Naphthalene	R982789	J
L429799-06	WG448970	SAMP	Naphthalene	R983599	J
L429799-09	WG448974	SAMP	Toluene	R983171	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

v8260 BTEXMNI - 40 mLAMB - HCl

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859
C225

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mLAMB - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		10/26/09	1408	2	X		L429799-01
MW-2	Grab	GW		10/26/09	1403	2	X		-02
MW-3	Grab	GW		10/26/09	1356	2	X		-03
MW-4	Grab	GW		10/26/09	1351	2	X		-04
MW-5	Grab	GW		10/26/09	1343	2	X		-05
MW-6	Grab	GW		10/26/09	1336	2	X		-06
MW-7	Grab	GW		10/26/09	1330	2	X		-07
EW-1	Grab	GW		10/26/09	1323	2	X		-08
EW-3	Grab	GW		10/26/09	1316	2	X		-09

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

pH _____ Temp _____

Remarks: DI Priority

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
	10/29/09	1300			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C / Bottles Received: 18	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/30/09 Time: 0900	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue

Sharon, PA 16146-1165

Report Summary

Wednesday March 03, 2010

Report Number: L446873
Samples Received: 02/26/10
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-01

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 14:22

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1000	58.	200	ug/l		8260B	03/02/10	200
Ethylbenzene	2200	44.	200	ug/l		8260B	03/02/10	200
Isopropylbenzene	190	62.	200	ug/l	J	8260B	03/02/10	200
Methyl tert-butyl ether	U	39.	200	ug/l		8260B	03/02/10	200
Naphthalene	520	33.	1000	ug/l	J	8260B	03/02/10	200
Toluene	360	64.	1000	ug/l	J	8260B	03/02/10	200
Total Xylenes	6900	140	600	ug/l		8260B	03/02/10	200
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	03/02/10	200
Dibromofluoromethane	99.0			% Rec.		8260B	03/02/10	200
4-Bromofluorobenzene	112.			% Rec.		8260B	03/02/10	200

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-02

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 14:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	2400	14.	50.	ug/l		8260B	03/02/10	50
Ethylbenzene	780	2.2	10.	ug/l		8260B	02/28/10	10
Isopropylbenzene	180	3.1	10	ug/l		8260B	02/28/10	10
Methyl tert-butyl ether	5.2	1.9	10.	ug/l	J	8260B	02/28/10	10
Naphthalene	120	1.7	50.	ug/l		8260B	02/28/10	10
Toluene	1400	16.	250	ug/l		8260B	03/02/10	50
Total Xylenes	2200	7.3	30	ug/l		8260B	02/28/10	10
Surrogate Recovery								
Toluene-d8	98.1			% Rec.		8260B	02/28/10	10
Dibromofluoromethane	102.			% Rec.		8260B	02/28/10	10
4-Bromofluorobenzene	100.			% Rec.		8260B	02/28/10	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-03

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 14:04

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	46.	0.29	1.0	ug/l		8260B	02/28/10	1
Ethylbenzene	U	0.22	1.0	ug/l	J3	8260B	02/28/10	1
Isopropylbenzene	4.2	0.31	1.	ug/l		8260B	02/28/10	1
Methyl tert-butyl ether	9.3	0.19	1.0	ug/l	J3	8260B	02/28/10	1
Naphthalene	1.7	0.17	5.0	ug/l	J	8260B	02/28/10	1
Toluene	3.5	0.32	5.	ug/l	JJ3	8260B	02/28/10	1
Total Xylenes	2.7	0.73	3.	ug/l	J	8260B	02/28/10	1
Surrogate Recovery								
Toluene-d8	97.7			% Rec.		8260B	02/28/10	1
Dibromofluoromethane	101.			% Rec.		8260B	02/28/10	1
4-Bromofluorobenzene	95.6			% Rec.		8260B	02/28/10	1

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-04

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 13:57

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1.1	0.29	1.0	ug/l		8260B	03/02/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	03/02/10	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	03/02/10	1
Methyl tert-butyl ether	3.4	0.19	1.0	ug/l		8260B	03/02/10	1
Naphthalene	U	0.17	5.0	ug/l		8260B	03/02/10	1
Toluene	0.33	0.32	5.	ug/l	J	8260B	03/02/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	03/02/10	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	03/02/10	1
Dibromofluoromethane	97.8			% Rec.		8260B	03/02/10	1
4-Bromofluorobenzene	106.			% Rec.		8260B	03/02/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-05

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 13:49

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/28/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/28/10	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/28/10	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	02/28/10	1
Naphthalene	1.7	0.17	5.0	ug/l	J	8260B	02/28/10	1
Toluene	U	0.32	5.	ug/l		8260B	02/28/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/28/10	1
Surrogate Recovery								
Toluene-d8	98.9			% Rec.		8260B	02/28/10	1
Dibromofluoromethane	105.			% Rec.		8260B	02/28/10	1
4-Bromofluorobenzene	97.8			% Rec.		8260B	02/28/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-06

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 13:42

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/28/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/28/10	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/28/10	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	02/28/10	1
Naphthalene	1.6	0.17	5.0	ug/l	J	8260B	02/28/10	1
Toluene	U	0.32	5.	ug/l		8260B	02/28/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/28/10	1
Surrogate Recovery								
Toluene-d8	98.4			% Rec.		8260B	02/28/10	1
Dibromofluoromethane	107.			% Rec.		8260B	02/28/10	1
4-Bromofluorobenzene	98.3			% Rec.		8260B	02/28/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-07

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 13:35

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.29	1.0	ug/l		8260B	02/28/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	02/28/10	1
Isopropylbenzene	U	0.31	1.	ug/l		8260B	02/28/10	1
Methyl tert-butyl ether	U	0.19	1.0	ug/l		8260B	02/28/10	1
Naphthalene	1.6	0.17	5.0	ug/l	J	8260B	02/28/10	1
Toluene	U	0.32	5.	ug/l		8260B	02/28/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	02/28/10	1
Surrogate Recovery								
Toluene-d8	91.8			% Rec.		8260B	02/28/10	1
Dibromofluoromethane	111.			% Rec.		8260B	02/28/10	1
4-Bromofluorobenzene	97.7			% Rec.		8260B	02/28/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-08

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : EW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 13:25

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	230	1.4	5.0	ug/l		8260B	03/03/10	5
Ethylbenzene	280	1.1	5.0	ug/l		8260B	03/03/10	5
Isopropylbenzene	13.	0.31	1.	ug/l		8260B	02/28/10	1
Methyl tert-butyl ether	20.	0.19	1.0	ug/l		8260B	02/28/10	1
Naphthalene	75.	0.17	5.0	ug/l		8260B	02/28/10	1
Toluene	64.	0.32	5.	ug/l		8260B	02/28/10	1
Total Xylenes	1000	3.6	15.	ug/l		8260B	03/03/10	5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	02/28/10	1
Dibromofluoromethane	105.			% Rec.		8260B	02/28/10	1
4-Bromofluorobenzene	93.2			% Rec.		8260B	02/28/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 03, 2010

ESC Sample # : L446873-09

Date Received : February 26, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03/07315

Sample ID : EW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 02/23/10 13:17

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	320	1.4	5.0	ug/l		8260B	03/03/10	5
Ethylbenzene	73.	1.1	5.0	ug/l		8260B	03/03/10	5
Isopropylbenzene	32.	1.5	5.	ug/l		8260B	03/03/10	5
Methyl tert-butyl ether	35.	0.96	5.0	ug/l		8260B	03/03/10	5
Naphthalene	20.	0.84	25.	ug/l	J	8260B	03/03/10	5
Toluene	18.	1.6	25.	ug/l	J	8260B	03/03/10	5
Total Xylenes	46.	3.6	15.	ug/l		8260B	03/03/10	5
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	03/03/10	5
Dibromofluoromethane	99.4			% Rec.		8260B	03/03/10	5
4-Bromofluorobenzene	107.			% Rec.		8260B	03/03/10	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L446873-01	WG465778	SAMP	Isopropylbenzene	R1133669	J
	WG465778	SAMP	Naphthalene	R1133669	J
	WG465778	SAMP	Toluene	R1133669	J
L446873-02	WG465400	SAMP	Methyl tert-butyl ether	R1132891	J
L446873-03	WG465400	SAMP	Ethylbenzene	R1132891	J3
	WG465400	SAMP	Methyl tert-butyl ether	R1132891	J3
	WG465400	SAMP	Naphthalene	R1132891	J
	WG465400	SAMP	Toluene	R1132891	JJ3
	WG465400	SAMP	Total Xylenes	R1132891	J
L446873-04	WG465778	SAMP	Toluene	R1133669	J
L446873-05	WG465400	SAMP	Naphthalene	R1132891	J
L446873-06	WG465400	SAMP	Naphthalene	R1132891	J
L446873-07	WG465400	SAMP	Naphthalene	R1132891	J
L446873-09	WG465778	SAMP	Naphthalene	R1133669	J
	WG465778	SAMP	Toluene	R1133669	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by E051

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03/07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		02/23/10	1422	2	X		L4V6873-01
MW-2	Grab	GW		02/23/10	1415	2	X		02
MW-3	Grab	GW		02/23/10	1404	2	X		03
MW-4	Grab	GW		02/23/10	1357	2	X		04
MW-5	Grab	GW		02/23/10	1349	2	X		05
MW-6	Grab	GW		02/23/10	1342	2	X		06
MW-7	Grab	GW		02/23/10	1335	2	X		07
EW-1	Grab	GW		02/23/10	1325	2	X		08
EW-3		GW		02/23/10	1317	2	X		09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority

Flow _____ Other _____

9669 7457 4640

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	2/25/10	0915			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4°C / Bottles Received: 18+/TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 2-26-10 / Time: 09:00	pH Checked: / NCF:

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

July 09, 2010

Ms. Sara Giordano
Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

RE: Project: Arch Street 03-07315
Pace Project No.: 3030101

Dear Ms. Giordano:
Enclosed are the analytical results for sample(s) received by the laboratory on June 25, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amy Wells

amy.wells@pacelabs.com
Project Manager

Enclosures

cc: Insite Group, Insite Group, Inc.

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CERTIFICATIONS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE ANALYTE COUNT

Project: Arch Street 03-07315
Pace Project No.: 3030101

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3030101001	MW-1	EPA 8260	JHC	10	PASI-PA
3030101002	MW-2	EPA 8260	JHC	10	PASI-PA
3030101003	MW-3	EPA 8260	JHC	10	PASI-PA
3030101004	MW-4	EPA 8260	JHC	10	PASI-PA
3030101005	MW-5	EPA 8260	JHC	10	PASI-PA
3030101006	MW-6	EPA 8260	JHC	10	PASI-PA
3030101007	MW-7	EPA 8260	JHC	10	PASI-PA

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ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-1 **Lab ID: 3030101001** Collected: 06/22/10 14:44 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**829**	ug/L	20.0	20		07/02/10 17:51	71-43-2	
Ethylbenzene	**2540**	ug/L	20.0	20		07/02/10 17:51	100-41-4	
Isopropylbenzene (Cumene)	**81.5**	ug/L	1.0	1		07/02/10 17:25	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/02/10 17:25	1634-04-4	
Naphthalene	**331**	ug/L	2.0	1		07/02/10 17:25	91-20-3	
Toluene	**247**	ug/L	1.0	1		07/02/10 17:25	108-88-3	
Xylene (Total)	**7360**	ug/L	60.0	20		07/02/10 17:51	1330-20-7	
Toluene-d8 (S)	132	%	70-130	1		07/02/10 17:25	2037-26-5	S2
4-Bromofluorobenzene (S)	101	%	70-130	1		07/02/10 17:25	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		07/02/10 17:25	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-2 **Lab ID: 3030101002** Collected: 06/22/10 14:35 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1830**	ug/L	20.0	20		07/06/10 11:39	71-43-2	
Ethylbenzene	**801**	ug/L	5.0	5		07/02/10 18:42	100-41-4	
Isopropylbenzene (Cumene)	**161**	ug/L	1.0	1		07/01/10 04:00	98-82-8	
Methyl-tert-butyl ether	**3.4**	ug/L	1.0	1		07/01/10 04:00	1634-04-4	
Naphthalene	**204**	ug/L	2.0	1		07/01/10 04:00	91-20-3	
Toluene	**1330**	ug/L	5.0	5		07/02/10 18:42	108-88-3	
Xylene (Total)	**1230**	ug/L	15.0	5		07/02/10 18:42	1330-20-7	
Toluene-d8 (S)	100	%	70-130	1		07/01/10 04:00	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130	1		07/01/10 04:00	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130	1		07/01/10 04:00	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-3 **Lab ID: 3030101003** Collected: 06/22/10 14:26 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**36.6**	ug/L	1.0	1		07/02/10 12:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/02/10 12:46	100-41-4	
Isopropylbenzene (Cumene)	**3.5**	ug/L	1.0	1		07/02/10 12:46	98-82-8	
Methyl-tert-butyl ether	**10.2**	ug/L	1.0	1		07/02/10 12:46	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		07/02/10 12:46	91-20-3	
Toluene	**2.5**	ug/L	1.0	1		07/02/10 12:46	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/02/10 12:46	1330-20-7	
Toluene-d8 (S)	98	%	70-130	1		07/02/10 12:46	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130	1		07/02/10 12:46	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		07/02/10 12:46	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-4 **Lab ID: 3030101004** Collected: 06/22/10 14:18 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/01/10 04:50	71-43-2	
Ethylbenzene	**1.3**	ug/L	1.0	1		07/01/10 04:50	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/01/10 04:50	98-82-8	
Methyl-tert-butyl ether	**5.2**	ug/L	1.0	1		07/01/10 04:50	1634-04-4	
Naphthalene	**2.2**	ug/L	2.0	1		07/01/10 04:50	91-20-3	
Toluene	ND	ug/L	1.0	1		07/01/10 04:50	108-88-3	
Xylene (Total)	**4.5**	ug/L	3.0	1		07/01/10 04:50	1330-20-7	
Toluene-d8 (S)	97	%	70-130	1		07/01/10 04:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130	1		07/01/10 04:50	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		07/01/10 04:50	17060-07-0	

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-5 **Lab ID: 3030101005** Collected: 06/22/10 14:09 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/01/10 06:18	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/01/10 06:18	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/01/10 06:18	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/01/10 06:18	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		07/01/10 06:18	91-20-3	
Toluene	ND	ug/L	1.0	1		07/01/10 06:18	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		07/01/10 06:18	1330-20-7	
Toluene-d8 (S)	98	%	70-130	1		07/01/10 06:18	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130	1		07/01/10 06:18	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		07/01/10 06:18	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-6 **Lab ID: 3030101006** Collected: 06/22/10 13:59 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/01/10 05:16	71-43-2	
Ethylbenzene	**1.2**	ug/L	1.0	1		07/01/10 05:16	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/01/10 05:16	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/01/10 05:16	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		07/01/10 05:16	91-20-3	
Toluene	ND	ug/L	1.0	1		07/01/10 05:16	108-88-3	
Xylene (Total)	**3.9**	ug/L	3.0	1		07/01/10 05:16	1330-20-7	
Toluene-d8 (S)	98	%	70-130	1		07/01/10 05:16	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130	1		07/01/10 05:16	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		07/01/10 05:16	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street 03-07315
Pace Project No.: 3030101

Sample: MW-7 **Lab ID: 3030101007** Collected: 06/22/10 13:48 Received: 06/25/10 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		07/01/10 05:53	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/01/10 05:53	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		07/01/10 05:53	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		07/01/10 05:53	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		07/01/10 05:53	91-20-3	
Toluene	ND	ug/L	1.0	1		07/01/10 05:53	108-88-3	
Xylene (Total)	**3.0**	ug/L	3.0	1		07/01/10 05:53	1330-20-7	
Toluene-d8 (S)	96	%	70-130	1		07/01/10 05:53	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130	1		07/01/10 05:53	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		07/01/10 05:53	17060-07-0	

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QUALITY CONTROL DATA

Project: Arch Street 03-07315
Pace Project No.: 3030101

QC Batch: MSV/6391 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3030101001, 3030101002, 3030101003, 3030101004, 3030101005, 3030101006, 3030101007

METHOD BLANK: 188891 Matrix: Water
Associated Lab Samples: 3030101001, 3030101002, 3030101003, 3030101004, 3030101005, 3030101006, 3030101007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/30/10 21:39	
Ethylbenzene	ug/L	ND	1.0	06/30/10 21:39	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/30/10 21:39	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/30/10 21:39	
Naphthalene	ug/L	ND	2.0	06/30/10 21:39	
Toluene	ug/L	ND	1.0	06/30/10 21:39	
Xylene (Total)	ug/L	ND	3.0	06/30/10 21:39	
1,2-Dichloroethane-d4 (S)	%	91	70-130	06/30/10 21:39	
4-Bromofluorobenzene (S)	%	96	70-130	06/30/10 21:39	
Toluene-d8 (S)	%	97	70-130	06/30/10 21:39	

LABORATORY CONTROL SAMPLE: 188892

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.3	102	70-130	
Ethylbenzene	ug/L	20	19.9	99	70-130	
Isopropylbenzene (Cumene)	ug/L	20	19.6	98	70-130	
Methyl-tert-butyl ether	ug/L	20	19.7	98	70-130	
Naphthalene	ug/L	20	23.9	120	70-130	
Toluene	ug/L	20	20.4	102	70-130	
Xylene (Total)	ug/L	60	60.6	101	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			96	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 188893 188894

Parameter	Units	3030178001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	19.5	19.4	97	97	70-130	.2	
Ethylbenzene	ug/L	ND	20	20	20.4	19.7	102	99	70-130	4	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	19.7	19.1	99	96	70-130	3	
Methyl-tert-butyl ether	ug/L	ND	20	20	17.0	18.9	85	95	70-130	11	
Naphthalene	ug/L	ND	20	20	19.6	20.4	98	102	70-130	4	
Toluene	ug/L	ND	20	20	19.8	19.6	99	98	70-130	.6	
Xylene (Total)	ug/L	ND	60	60	61.9	59.8	103	100	70-130	3	
1,2-Dichloroethane-d4 (S)	%						92	94	70-130		
4-Bromofluorobenzene (S)	%						96	98	70-130		
Toluene-d8 (S)	%						100	99	70-130		

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Arch Street 03-07315
Pace Project No.: 3030101

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Arch Street 03-07315
Pace Project No.: 3030101

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3030101001	MW-1	EPA 8260	MSV/6391		
3030101002	MW-2	EPA 8260	MSV/6391		
3030101003	MW-3	EPA 8260	MSV/6391		
3030101004	MW-4	EPA 8260	MSV/6391		
3030101005	MW-5	EPA 8260	MSV/6391		
3030101006	MW-6	EPA 8260	MSV/6391		
3030101007	MW-7	EPA 8260	MSV/6391		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — **Required** Client Information:

Company:	Insite Group, Inc
Address:	611 South Irvine Avene
	Sharon, PA 16146
Email To:	lab@insitegroup.org
Phone: 724-347-2101	Fax: 724-347-2139
Requested Due Date/TAT:	

Section B — **Required** Project Information:

Report To:	Sara Giordano
Copy To:	
Purchase Order No.:	
Project Name:	Arch Street
Project Number:	03-07315

Section C — Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: PA

Section D — **Required** Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	Sample ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA 8260 Volatiles (Old PA UST shortlist - unleaded)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			06/22/10	1414		3				X					X			001
2	MW-2	WT	G			06/22/10	1435		3				X					X			002
3	MW-3	WT	G			06/22/10	1426		3				X					X			003
4	MW-4	WT	G			06/22/10	1418		3				X					X			004
5	MW-5	WT	G			06/22/10	1409		3				X					X			005
6	MW-6	WT	G			06/22/10	1359		3				X					X			006
7	MW-7	WT	G			06/22/10	1348		3				X					X			007
8																					
9																					
10																					
11																					
12																					

3030101

Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	D Giordano	6/24/10	1045	Pace	6/25	13:40	7.1	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ADAM GAINES

SIGNATURE of SAMPLER: Adam Gaines

DATE Signed (MM/DD/YY): 6/22/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

SR3

Sample Condition Upon Receipt

Pace Analytical

Client Name: Insite Group Project # 3030101

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace (Other) US Cargo

Tracking #: 5449000000118595

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☑ yes ☐ no

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 3 (5) **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 7.1 not enough ice **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: LEL 06/25/10

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: A				
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	
exceptions: (VOA) coliform, TOC, O&G, WI-DRO (water)	☑Yes	☐No		Initial when completed LEL Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 6/28/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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1-800-767-5859
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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday September 09, 2010

Report Number: L477220
Samples Received: 09/03/10
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-01

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 14:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	820	4.5	20.	ug/l		8260B	09/04/10	20
Ethylbenzene	1300	4.3	20.	ug/l		8260B	09/04/10	20
Isopropylbenzene	95.	4.	20	ug/l		8260B	09/04/10	20
Methyl tert-butyl ether	73.	12.	20.	ug/l		8260B	09/04/10	20
Naphthalene	480	20.	100	ug/l		8260B	09/04/10	20
Toluene	260	6.4	100	ug/l		8260B	09/04/10	20
Total Xylenes	3900	14.	60	ug/l		8260B	09/04/10	20
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	09/04/10	20
Dibromofluoromethane	95.2			% Rec.		8260B	09/04/10	20
4-Bromofluorobenzene	95.3			% Rec.		8260B	09/04/10	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 09/09/10 14:21 Printed: 09/09/10 14:22

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-02

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 14:24

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	2000	4.5	20.	ug/l		8260B	09/04/10	20
Ethylbenzene	880	4.3	20.	ug/l		8260B	09/04/10	20
Isopropylbenzene	140	4.	20	ug/l		8260B	09/04/10	20
Methyl tert-butyl ether	U	12.	20.	ug/l		8260B	09/04/10	20
Naphthalene	190	20.	100	ug/l		8260B	09/04/10	20
Toluene	1400	6.4	100	ug/l		8260B	09/04/10	20
Total Xylenes	3000	14.	60	ug/l		8260B	09/04/10	20
Surrogate Recovery								
Toluene-d8	97.0			% Rec.		8260B	09/04/10	20
Dibromofluoromethane	90.6			% Rec.		8260B	09/04/10	20
4-Bromofluorobenzene	95.0			% Rec.		8260B	09/04/10	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 09/09/10 14:21 Printed: 09/09/10 14:22

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-03

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 14:18

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	8.5	0.23	1.0	ug/l		8260B	09/04/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/04/10	1
Isopropylbenzene	0.92	0.2	1.	ug/l	J	8260B	09/04/10	1
Methyl tert-butyl ether	8.8	0.63	1.0	ug/l		8260B	09/04/10	1
Naphthalene	U	0.98	5.0	ug/l		8260B	09/04/10	1
Toluene	0.55	0.32	5.	ug/l	J	8260B	09/04/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/04/10	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	09/04/10	1
Dibromofluoromethane	92.7			% Rec.		8260B	09/04/10	1
4-Bromofluorobenzene	97.9			% Rec.		8260B	09/04/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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YOUR LAB OF CHOICE

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-04

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 14:10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.84	0.23	1.0	ug/l	J	8260B	09/07/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/07/10	1
Isopropylbenzene	U	0.2	1.	ug/l		8260B	09/07/10	1
Methyl tert-butyl ether	10.	0.63	1.0	ug/l		8260B	09/07/10	1
Naphthalene	U	0.98	5.0	ug/l		8260B	09/07/10	1
Toluene	U	0.32	5.	ug/l		8260B	09/07/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/07/10	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	09/07/10	1
Dibromofluoromethane	118.			% Rec.		8260B	09/07/10	1
4-Bromofluorobenzene	112.			% Rec.		8260B	09/07/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-05

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-5

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 14:03

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.23	1.0	ug/l		8260B	09/07/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/07/10	1
Isopropylbenzene	U	0.2	1.	ug/l		8260B	09/07/10	1
Methyl tert-butyl ether	U	0.63	1.0	ug/l		8260B	09/07/10	1
Naphthalene	U	0.98	5.0	ug/l		8260B	09/07/10	1
Toluene	U	0.32	5.	ug/l		8260B	09/07/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/07/10	1
Surrogate Recovery								
Toluene-d8	110.			% Rec.		8260B	09/07/10	1
Dibromofluoromethane	117.			% Rec.		8260B	09/07/10	1
4-Bromofluorobenzene	116.			% Rec.		8260B	09/07/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-06

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-6

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 13:56

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.23	1.0	ug/l		8260B	09/07/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/07/10	1
Isopropylbenzene	U	0.2	1.	ug/l		8260B	09/07/10	1
Methyl tert-butyl ether	U	0.63	1.0	ug/l		8260B	09/07/10	1
Naphthalene	U	0.98	5.0	ug/l		8260B	09/07/10	1
Toluene	U	0.32	5.	ug/l		8260B	09/07/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/07/10	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	09/07/10	1
Dibromofluoromethane	115.			% Rec.		8260B	09/07/10	1
4-Bromofluorobenzene	113.			% Rec.		8260B	09/07/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 09, 2010

ESC Sample # : L477220-07

Date Received : September 03, 2010
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-7

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 08/31/10 13:47

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.23	1.0	ug/l		8260B	09/08/10	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	09/08/10	1
Isopropylbenzene	U	0.2	1.	ug/l		8260B	09/08/10	1
Methyl tert-butyl ether	U	0.63	1.0	ug/l		8260B	09/08/10	1
Naphthalene	U	0.98	5.0	ug/l		8260B	09/08/10	1
Toluene	U	0.32	5.	ug/l		8260B	09/08/10	1
Total Xylenes	U	0.73	3.	ug/l		8260B	09/08/10	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	09/08/10	1
Dibromofluoromethane	113.			% Rec.		8260B	09/08/10	1
4-Bromofluorobenzene	104.			% Rec.		8260B	09/08/10	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Reported: 09/09/10 14:21 Printed: 09/09/10 14:22

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L477220-03	WG496958	SAMP	Isopropylbenzene	R1365708	J
	WG496958	SAMP	Toluene	R1365708	J
L477220-04	WG496959	SAMP	Benzene	R1366668	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

G040

Chain of Custody Page 1 of 1

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes
FAX? ✓No __Yes

Analysis/Container/Preservativ

V8260BTEXMNI / 40mlAmb / HCl

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		08/31/10	1430	2	X		L477220-01
MW-2	Grab	GW		08/31/10	1424	2	X		-02
MW-3	Grab	GW		08/31/10	1418	2	X		-03
MW-4	Grab	GW		08/31/10	1410	2	X		-04
MW-5	Grab	GW		08/31/10	1403	2	X		-05
MW-6	Grab	GW		08/31/10	1356	2	X		-06
MW-7	Grab	GW		08/31/10	1347	2	X		-07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority 4341 9911 1365

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Adam Gaines	9/2/10	1330			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.6°C / Bottles Received: 14 V	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) J. Fellers	Date: 09-03-10 / Time: 0900	pH Checked: / NCF:

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

January 05, 2011

Ms. Sara Giordano
Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

RE: Project: Arch St
Pace Project No.: 3039170

Dear Ms. Giordano:
Enclosed are the analytical results for sample(s) received by the laboratory on December 23, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Penny Westrick

penny.westrick@pacelabs.com
Project Manager

Enclosures

cc: Insite Group, Insite Group, Inc.

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CERTIFICATIONS

Project: Arch St
Pace Project No.: 3039170

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE ANALYTE COUNT

Project: Arch St
Pace Project No.: 3039170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3039170001	MW-1	EPA 8260	JAS, MAK	10	PASI-PA
3039170002	MW-2	EPA 8260	MAK	10	PASI-PA
3039170003	MW-3	EPA 8260	MAK	10	PASI-PA
3039170004	MW-4	EPA 8260	MAK	10	PASI-PA

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ANALYTICAL RESULTS

Project: Arch St
Pace Project No.: 3039170

Sample: MW-1 **Lab ID: 3039170001** Collected: 12/21/10 13:27 Received: 12/23/10 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**763**	ug/L	100	100		01/03/11 15:17	71-43-2	
Ethylbenzene	**3600**	ug/L	100	100		01/03/11 15:17	100-41-4	
Isopropylbenzene (Cumene)	**199**	ug/L	1.0	1		12/31/10 07:46	98-82-8	
Methyl-tert-butyl ether	**14.6**	ug/L	1.0	1		12/31/10 07:46	1634-04-4	
Naphthalene	**940**	ug/L	200	100		01/03/11 15:17	91-20-3	
Toluene	**344**	ug/L	1.0	1		12/31/10 07:46	108-88-3	
Xylene (Total)	**9690**	ug/L	300	100		01/03/11 15:17	1330-20-7	
Toluene-d8 (S)	124	%	70-130	1		12/31/10 07:46	2037-26-5	
4-Bromofluorobenzene (S)	82	%	70-130	1		12/31/10 07:46	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130	1		12/31/10 07:46	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St
Pace Project No.: 3039170

Sample: MW-2 **Lab ID: 3039170002** Collected: 12/21/10 13:21 Received: 12/23/10 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1240**	ug/L	20.0	20		12/31/10 08:38	71-43-2	
Ethylbenzene	**297**	ug/L	1.0	1		12/31/10 08:12	100-41-4	
Isopropylbenzene (Cumene)	**116**	ug/L	1.0	1		12/31/10 08:12	98-82-8	
Methyl-tert-butyl ether	**2.4**	ug/L	1.0	1		12/31/10 08:12	1634-04-4	
Naphthalene	**103**	ug/L	2.0	1		12/31/10 08:12	91-20-3	
Toluene	**227**	ug/L	1.0	1		12/31/10 08:12	108-88-3	
Xylene (Total)	**755**	ug/L	3.0	1		12/31/10 08:12	1330-20-7	
Toluene-d8 (S)	100	%	70-130	1		12/31/10 08:12	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130	1		12/31/10 08:12	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		12/31/10 08:12	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St
Pace Project No.: 3039170

Sample: MW-3 **Lab ID: 3039170003** Collected: 12/21/10 13:13 Received: 12/23/10 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**5.1**	ug/L	1.0	1		12/31/10 09:04	71-43-2	
Ethylbenzene	**1.8**	ug/L	1.0	1		12/31/10 09:04	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/31/10 09:04	98-82-8	
Methyl-tert-butyl ether	**7.2**	ug/L	1.0	1		12/31/10 09:04	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		12/31/10 09:04	91-20-3	
Toluene	ND	ug/L	1.0	1		12/31/10 09:04	108-88-3	
Xylene (Total)	**4.9**	ug/L	3.0	1		12/31/10 09:04	1330-20-7	
Toluene-d8 (S)	91	%	70-130	1		12/31/10 09:04	2037-26-5	
4-Bromofluorobenzene (S)	92	%	70-130	1		12/31/10 09:04	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		12/31/10 09:04	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St
Pace Project No.: 3039170

Sample: MW-4 **Lab ID: 3039170004** Collected: 12/21/10 13:05 Received: 12/23/10 12:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		12/31/10 09:30	71-43-2	
Ethylbenzene	**1.2**	ug/L	1.0	1		12/31/10 09:30	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/31/10 09:30	98-82-8	
Methyl-tert-butyl ether	**1.1**	ug/L	1.0	1		12/31/10 09:30	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		12/31/10 09:30	91-20-3	
Toluene	ND	ug/L	1.0	1		12/31/10 09:30	108-88-3	
Xylene (Total)	**3.5**	ug/L	3.0	1		12/31/10 09:30	1330-20-7	
Toluene-d8 (S)	89	%	70-130	1		12/31/10 09:30	2037-26-5	
4-Bromofluorobenzene (S)	92	%	70-130	1		12/31/10 09:30	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		12/31/10 09:30	17060-07-0	

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Greensburg, PA 15601
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QUALITY CONTROL DATA

Project: Arch St
Pace Project No.: 3039170

QC Batch: MSV/8165 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3039170001, 3039170002, 3039170003, 3039170004

METHOD BLANK: 254338 Matrix: Water
Associated Lab Samples: 3039170001, 3039170002, 3039170003, 3039170004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/31/10 03:50	
Ethylbenzene	ug/L	ND	1.0	12/31/10 03:50	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/31/10 03:50	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/31/10 03:50	
Naphthalene	ug/L	ND	2.0	12/31/10 03:50	
Toluene	ug/L	ND	1.0	12/31/10 03:50	
Xylene (Total)	ug/L	ND	3.0	12/31/10 03:50	
1,2-Dichloroethane-d4 (S)	%	98	70-130	12/31/10 03:50	
4-Bromofluorobenzene (S)	%	96	70-130	12/31/10 03:50	
Toluene-d8 (S)	%	92	70-130	12/31/10 03:50	

LABORATORY CONTROL SAMPLE: 254339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.1	90	70-130	
Ethylbenzene	ug/L	20	17.6	88	70-130	
Isopropylbenzene (Cumene)	ug/L	20	18.5	92	70-130	
Methyl-tert-butyl ether	ug/L	20	20.0	100	70-130	
Naphthalene	ug/L	20	17.0	85	70-130	
Toluene	ug/L	20	18.2	91	70-130	
Xylene (Total)	ug/L	60	54.1	90	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			94	70-130	
Toluene-d8 (S)	%			95	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 254508 254509

Parameter	Units	3039167001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	19.6	19.2	98	96	70-130	2	
Ethylbenzene	ug/L	ND	20	20	19.2	19.0	96	95	70-130	.9	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.0	20.9	105	105	70-130	.6	
Methyl-tert-butyl ether	ug/L	6.4	20	20	27.2	27.7	104	106	70-130	2	
Naphthalene	ug/L	ND	20	20	19.7	20.0	99	100	70-130	1	
Toluene	ug/L	ND	20	20	19.9	19.7	99	98	70-130	.9	
Xylene (Total)	ug/L	ND	60	60	58.6	58.7	98	98	70-130	.2	
1,2-Dichloroethane-d4 (S)	%						93	93	70-130		
4-Bromofluorobenzene (S)	%						86	89	70-130		
Toluene-d8 (S)	%						81	84	70-130		

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(724)850-5600

QUALIFIERS

Project: Arch St
Pace Project No.: 3039170

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Arch St
Pace Project No.: 3039170

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3039170001	**MW-1**	EPA 8260	MSV/8165		
3039170002	**MW-2**	EPA 8260	MSV/8165		
3039170003	**MW-3**	EPA 8260	MSV/8165		
3039170004	**MW-4**	EPA 8260	MSV/8165		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: | of |

1362667

Section A Required Client Information:

Company: Insite Group, Inc.
Address: 611 S. Irvine Ave
Sharon PA 16146
Email To: lab@insitegroup.org
Phone: 724-347-2101 Fax: 724-347-2139
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Sara Giordano
Copy To:
Purchase Order No.:
Project Name: ARCH ST
Project Number: ~~[illegible]~~

Section C Invoice Information:

Attention: (Same)
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOCs old short list unleaded gasoline parameters	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			12/21/10	1327		3				X						X		001
2	MW-2	"	"			"	1321		"				X						X		002
3	MW-3	"	"			"	1313		"				X						X		003
4	MW-4	"	"			"	1305		"				X						X		004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

3039170

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature]	12/22/10	1530	[signature]	12/23/10	1215	2.3	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Adam Gaines

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 12/22/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday March 31, 2011

Report Number: L508443
Samples Received: 03/29/11
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2011

ESC Sample # : L508443-01

Date Received : March 29, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Mueller
Collection Date : 03/24/11 15:52

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	320	2.3	10.	ug/l		8260B	03/30/11	10
Ethylbenzene	940	2.2	10.	ug/l		8260B	03/30/11	10
Isopropylbenzene	58.	2.	10	ug/l		8260B	03/30/11	10
Methyl tert-butyl ether	14.	6.3	10.	ug/l		8260B	03/30/11	10
Naphthalene	300	9.8	50.	ug/l		8260B	03/30/11	10
Toluene	140	3.2	50	ug/l		8260B	03/30/11	10
Total Xylenes	2900	7.3	30	ug/l		8260B	03/30/11	10
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	03/30/11	10
Dibromofluoromethane	96.9			% Rec.		8260B	03/30/11	10
4-Bromofluorobenzene	101.			% Rec.		8260B	03/30/11	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2011

ESC Sample # : L508443-02

Date Received : March 29, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Mueller
Collection Date : 03/24/11 15:39

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	660	4.5	20.	ug/l		8260B	03/30/11	20
Ethylbenzene	220	4.3	20.	ug/l		8260B	03/30/11	20
Isopropylbenzene	77.	4.	20	ug/l		8260B	03/30/11	20
Methyl tert-butyl ether	U	12.	20.	ug/l		8260B	03/30/11	20
Naphthalene	54.	20.	100	ug/l	J	8260B	03/30/11	20
Toluene	130	6.4	100	ug/l		8260B	03/30/11	20
Total Xylenes	560	14.	60	ug/l		8260B	03/30/11	20
Surrogate Recovery								
Toluene-d8	99.4			% Rec.		8260B	03/30/11	20
Dibromofluoromethane	98.0			% Rec.		8260B	03/30/11	20
4-Bromofluorobenzene	116.			% Rec.		8260B	03/30/11	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2011

ESC Sample # : L508443-03

Date Received : March 29, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Mueller
Collection Date : 03/24/11 15:27

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	52.	0.23	1.0	ug/l		8260B	03/30/11	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	03/30/11	1
Isopropylbenzene	1.3	0.2	1.	ug/l		8260B	03/30/11	1
Methyl tert-butyl ether	1.4	0.63	1.0	ug/l		8260B	03/30/11	1
Naphthalene	U	0.98	5.0	ug/l		8260B	03/30/11	1
Toluene	1.5	0.32	5.	ug/l	J	8260B	03/30/11	1
Total Xylenes	1.	0.73	3.	ug/l	J	8260B	03/30/11	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	03/30/11	1
Dibromofluoromethane	97.6			% Rec.		8260B	03/30/11	1
4-Bromofluorobenzene	101.			% Rec.		8260B	03/30/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2011

ESC Sample # : L508443-04

Date Received : March 29, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Mueller
Collection Date : 03/24/11 15:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.23	1.0	ug/l		8260B	03/30/11	1
Ethylbenzene	U	0.22	1.0	ug/l		8260B	03/30/11	1
Isopropylbenzene	U	0.2	1.	ug/l		8260B	03/30/11	1
Methyl tert-butyl ether	0.93	0.63	1.0	ug/l	J	8260B	03/30/11	1
Naphthalene	U	0.98	5.0	ug/l		8260B	03/30/11	1
Toluene	U	0.32	5.	ug/l		8260B	03/30/11	1
Total Xylenes	U	0.73	3.	ug/l		8260B	03/30/11	1
Surrogate Recovery								
Toluene-d8	99.6			% Rec.		8260B	03/30/11	1
Dibromofluoromethane	98.5			% Rec.		8260B	03/30/11	1
4-Bromofluorobenzene	114.			% Rec.		8260B	03/30/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2011

ESC Sample # : L508443-05

Date Received : March 29, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH STREET

Collected By : Mueller
Collection Date : 03/24/11 15:45

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	660	2.3	10.	ug/l		8260B	03/30/11	10
Ethylbenzene	170	0.22	1.0	ug/l		8260B	03/30/11	1
Isopropylbenzene	66.	0.2	1.	ug/l		8260B	03/30/11	1
Methyl tert-butyl ether	1.5	0.63	1.0	ug/l		8260B	03/30/11	1
Naphthalene	47.	0.98	5.0	ug/l		8260B	03/30/11	1
Toluene	120	0.32	5.	ug/l		8260B	03/30/11	1
Total Xylenes	440	0.73	3.	ug/l		8260B	03/30/11	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	03/30/11	1
Dibromofluoromethane	98.2			% Rec.		8260B	03/30/11	1
4-Bromofluorobenzene	103.			% Rec.		8260B	03/30/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L508443-02	WG528458	SAMP	Naphthalene	R1629429	J
L508443-03	WG528458	SAMP	Toluene	R1629429	J
	WG528458	SAMP	Total Xylenes	R1629429	J
L508443-04	WG528458	SAMP	Methyl tert-butyl ether	R1629429	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

B043

Chain of Custody
Page 1 of 1

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): Greg Mueller

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservativ

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		03/24/11	15552	2	X		L508443-01
MW-2					1539	2	X		02
MW-3					1527	2	X		03
MW-4					1515	2	X		04
MW-51					1545	2	X		05

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority 43411 9816 1760

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
Greg Mueller	3/28/11	1215			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C Bottles Received: 10	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 329.11 Time: 0900	pH Checked: NCF:

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Greensburg, PA 15601
(724)850-5600

June 30, 2011

Ms. Sara Giordano
Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

RE: Project: Arch-QTR
Pace Project No.: 3048650

Dear Ms. Giordano:
Enclosed are the analytical results for sample(s) received by the laboratory on June 17, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Penelope Westrick

Penny Westrick for
Raymond Rios, Jr.
raymond.rios@pacelabs.com
Project Manager

Enclosures

cc: Insite Group, Insite Group, Inc.

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Pace Analytical Services, Inc.
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Greensburg, PA 15601
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CERTIFICATIONS

Project: Arch-QTR
Pace Project No.: 3048650

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Arch-QTR
Pace Project No.: 3048650

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3048650001	MW-1	EPA 8260	MAK	10	PASI-PA
3048650002	MW-2	EPA 8260	MAK	10	PASI-PA
3048650003	MW-3	EPA 8260	MAK	10	PASI-PA
3048650004	MW-4	EPA 8260	MAK	10	PASI-PA
3048650005	MW-51	EPA 8260	MAK	10	PASI-PA

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 3048650

Sample: MW-1 **Lab ID: 3048650001** Collected: 06/13/11 13:32 Received: 06/17/11 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**506**	ug/L	20.0	20		06/29/11 23:04	71-43-2	
Ethylbenzene	**1670**	ug/L	20.0	20		06/29/11 23:04	100-41-4	
Isopropylbenzene (Cumene)	**70.0**	ug/L	1.0	1		06/27/11 17:22	98-82-8	
Methyl-tert-butyl ether	**31.8**	ug/L	1.0	1		06/27/11 17:22	1634-04-4	
Naphthalene	**279**	ug/L	2.0	1		06/27/11 17:22	91-20-3	
Toluene	**167**	ug/L	1.0	1		06/27/11 17:22	108-88-3	
Xylene (Total)	**6080**	ug/L	60.0	20		06/29/11 23:04	1330-20-7	
Toluene-d8 (S)	111	%	70-130	1		06/27/11 17:22	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130	1		06/27/11 17:22	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		06/27/11 17:22	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 3048650

Sample: MW-2 **Lab ID: 3048650002** Collected: 06/13/11 13:24 Received: 06/17/11 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1060**	ug/L	20.0	20		06/29/11 23:28	71-43-2	
Ethylbenzene	**386**	ug/L	1.0	1		06/27/11 17:47	100-41-4	
Isopropylbenzene (Cumene)	**99.2**	ug/L	1.0	1		06/27/11 17:47	98-82-8	
Methyl-tert-butyl ether	**2.1**	ug/L	1.0	1		06/27/11 17:47	1634-04-4	
Naphthalene	**78.5**	ug/L	2.0	1		06/27/11 17:47	91-20-3	
Toluene	**332**	ug/L	1.0	1		06/27/11 17:47	108-88-3	
Xylene (Total)	**858**	ug/L	3.0	1		06/27/11 17:47	1330-20-7	
Toluene-d8 (S)	103	%	70-130	1		06/27/11 17:47	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130	1		06/27/11 17:47	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		06/27/11 17:47	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 3048650

Sample: MW-3 **Lab ID: 3048650003** Collected: 06/13/11 13:08 Received: 06/17/11 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**34.8**	ug/L	1.0	1		06/27/11 18:11	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/27/11 18:11	100-41-4	
Isopropylbenzene (Cumene)	**1.8**	ug/L	1.0	1		06/27/11 18:11	98-82-8	
Methyl-tert-butyl ether	**2.1**	ug/L	1.0	1		06/27/11 18:11	1634-04-4	
Naphthalene	**2.7**	ug/L	2.0	1		06/27/11 18:11	91-20-3	
Toluene	**1.1**	ug/L	1.0	1		06/27/11 18:11	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/27/11 18:11	1330-20-7	
Toluene-d8 (S)	104	%	70-130	1		06/27/11 18:11	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130	1		06/27/11 18:11	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		06/27/11 18:11	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 3048650

Sample: MW-4 **Lab ID: 3048650004** Collected: 06/13/11 12:58 Received: 06/17/11 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		06/27/11 18:35	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/27/11 18:35	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/27/11 18:35	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/27/11 18:35	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/27/11 18:35	91-20-3	
Toluene	ND	ug/L	1.0	1		06/27/11 18:35	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/27/11 18:35	1330-20-7	
Toluene-d8 (S)	98	%	70-130	1		06/27/11 18:35	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130	1		06/27/11 18:35	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		06/27/11 18:35	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 3048650

Sample: MW-51 **Lab ID: 3048650005** Collected: 06/13/11 13:45 Received: 06/17/11 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1080**	ug/L	20.0	20		06/29/11 23:53	71-43-2	
Ethylbenzene	**380**	ug/L	1.0	1		06/27/11 18:59	100-41-4	
Isopropylbenzene (Cumene)	**94.7**	ug/L	1.0	1		06/27/11 18:59	98-82-8	
Methyl-tert-butyl ether	**2.1**	ug/L	1.0	1		06/27/11 18:59	1634-04-4	
Naphthalene	**71.5**	ug/L	2.0	1		06/27/11 18:59	91-20-3	
Toluene	**335**	ug/L	1.0	1		06/27/11 18:59	108-88-3	
Xylene (Total)	**914**	ug/L	3.0	1		06/27/11 18:59	1330-20-7	
Toluene-d8 (S)	103	%	70-130	1		06/27/11 18:59	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130	1		06/27/11 18:59	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		06/27/11 18:59	17060-07-0	

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QUALITY CONTROL DATA

Project: Arch-QTR
Pace Project No.: 3048650

QC Batch: MSV/9720 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3048650001, 3048650002, 3048650003, 3048650004, 3048650005

METHOD BLANK: 314448 Matrix: Water
Associated Lab Samples: 3048650001, 3048650002, 3048650003, 3048650004, 3048650005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/27/11 14:08	
Ethylbenzene	ug/L	ND	1.0	06/27/11 14:08	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/27/11 14:08	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/27/11 14:08	
Naphthalene	ug/L	ND	2.0	06/27/11 14:08	
Toluene	ug/L	ND	1.0	06/27/11 14:08	
Xylene (Total)	ug/L	ND	3.0	06/27/11 14:08	
1,2-Dichloroethane-d4 (S)	%	97	70-130	06/27/11 14:08	
4-Bromofluorobenzene (S)	%	100	70-130	06/27/11 14:08	
Toluene-d8 (S)	%	96	70-130	06/27/11 14:08	

LABORATORY CONTROL SAMPLE: 314449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.3	101	70-130	
Ethylbenzene	ug/L	20	21.1	105	70-130	
Isopropylbenzene (Cumene)	ug/L	20	21.1	106	70-130	
Methyl-tert-butyl ether	ug/L	20	25.1	125	70-130	
Naphthalene	ug/L	20	19.4	97	70-130	
Toluene	ug/L	20	20.9	104	70-130	
Xylene (Total)	ug/L	60	65.7	110	70-130	
1,2-Dichloroethane-d4 (S)	%			104	70-130	
4-Bromofluorobenzene (S)	%			108	70-130	
Toluene-d8 (S)	%			98	70-130	

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QUALIFIERS

Project: Arch-QTR
Pace Project No.: 3048650

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Arch-QTR
Pace Project No.: 3048650

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3048650001	MW-1	EPA 8260	MSV/9720		
3048650002	MW-2	EPA 8260	MSV/9720		
3048650003	MW-3	EPA 8260	MSV/9720		
3048650004	MW-4	EPA 8260	MSV/9720		
3048650005	MW-51	EPA 8260	MSV/9720		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Insite Group, Inc	Report To:	Sara Giordano	Attention:	
Address:	611 South Irvine Avene	Copy To:		Company Name:	
	Sharon, PA 16146			Address:	
Email To:	lab@insitegroup.org	Purchase Order No.:		Pace Quote Reference:	
Phone:	724-347-2101 Fax: 724-347-2139	Project Name:	Arch - QTR	Pace Project Manager:	Penny Westrick
Requested Due Date/TAT:		Project Number:	03-07315	Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Kittanning PA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA 8260 Volatiles (Old PA UST shortlist - unleaded)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			06/13/11	1332		3				X					X	X		001
2	MW-2	WT	G			06/13/11	1324		3				X					X	X		002
3	MW-3	WT	G			06/13/11	1308		3				X					X	X		003
4	MW-4	WT	G			06/13/11	1258		3				X					X	X		004
5	MW-51	WT	G			06/13/11	1345		3				X					X	X		005
6																					
7																					
8																					
9																					
10																					
11																					
12																					

30458050

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Shipped Fed Ex	Adam Gaines / ICG	6/16/11	1230	R Sylvester / Pace	6/17/11	1015	4.3	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ADAM GAINES

SIGNATURE of SAMPLER: Adam Gaines DATE Signed (MM/DD/YY): 6/15/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Tuesday August 23, 2011

Report Number: L532033
Samples Received: 08/19/11
Client Project: ARCH ST

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 23, 2011

ESC Sample # : L532033-01

Date Received : August 19, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 08/15/11 14:31

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	630	3.6	20.	ug/l		8260B	08/22/11	20
Ethylbenzene	1200	5.5	20.	ug/l		8260B	08/22/11	20
Isopropylbenzene	63.	3.7	20	ug/l		8260B	08/22/11	20
Methyl tert-butyl ether	88.	5.3	20.	ug/l		8260B	08/22/11	20
Naphthalene	320	14.	100	ug/l		8260B	08/22/11	20
Toluene	220	3.3	100	ug/l		8260B	08/22/11	20
Total Xylenes	3500	14.	60	ug/l		8260B	08/22/11	20
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	08/22/11	20
Dibromofluoromethane	97.2			% Rec.		8260B	08/22/11	20
4-Bromofluorobenzene	96.0			% Rec.		8260B	08/22/11	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 08/23/11 15:11 Printed: 08/23/11 15:12

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 23, 2011

ESC Sample # : L532033-02

Date Received : August 19, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 08/15/11 14:22

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1600	8.9	50.	ug/l		8260B	08/20/11	50
Ethylbenzene	600	14.	50.	ug/l		8260B	08/20/11	50
Isopropylbenzene	130	9.2	50	ug/l		8260B	08/20/11	50
Methyl tert-butyl ether	U	13.	50.	ug/l		8260B	08/20/11	50
Naphthalene	120	35.	250	ug/l	J	8260B	08/20/11	50
Toluene	750	8.2	250	ug/l		8260B	08/20/11	50
Total Xylenes	1900	36.	150	ug/l		8260B	08/20/11	50
Surrogate Recovery								
Toluene-d8	98.8			% Rec.		8260B	08/20/11	50
Dibromofluoromethane	103.			% Rec.		8260B	08/20/11	50
4-Bromofluorobenzene	98.9			% Rec.		8260B	08/20/11	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 23, 2011

ESC Sample # : L532033-03

Date Received : August 19, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 08/15/11 14:09

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	15.	0.18	1.0	ug/l		8260B	08/20/11	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	08/20/11	1
Isopropylbenzene	2.4	0.18	1.	ug/l	J4	8260B	08/20/11	1
Methyl tert-butyl ether	3.7	0.27	1.0	ug/l		8260B	08/20/11	1
Naphthalene	U	0.69	5.0	ug/l		8260B	08/20/11	1
Toluene	1.5	0.16	5.	ug/l	J	8260B	08/20/11	1
Total Xylenes	U	0.73	3.	ug/l		8260B	08/20/11	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	08/20/11	1
Dibromofluoromethane	100.			% Rec.		8260B	08/20/11	1
4-Bromofluorobenzene	99.2			% Rec.		8260B	08/20/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 23, 2011

ESC Sample # : L532033-04

Date Received : August 19, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 08/15/11 13:58

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1.2	0.18	1.0	ug/l		8260B	08/20/11	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	08/20/11	1
Isopropylbenzene	U	0.18	1.	ug/l	J4	8260B	08/20/11	1
Methyl tert-butyl ether	3.0	0.27	1.0	ug/l		8260B	08/20/11	1
Naphthalene	U	0.69	5.0	ug/l		8260B	08/20/11	1
Toluene	U	0.16	5.	ug/l		8260B	08/20/11	1
Total Xylenes	U	0.73	3.	ug/l		8260B	08/20/11	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	08/20/11	1
Dibromofluoromethane	103.			% Rec.		8260B	08/20/11	1
4-Bromofluorobenzene	103.			% Rec.		8260B	08/20/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 08/23/11 15:11 Printed: 08/23/11 15:12

ESC LAB SCIENCES
YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
(615) 758-5858
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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 23, 2011

ESC Sample # : L532033-05

Date Received : August 19, 2011
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH ST

Collected By : Adam Gaines
Collection Date : 08/15/11 14:45

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1700	3.6	20.	ug/l		8260B	08/22/11	20
Ethylbenzene	600	5.5	20.	ug/l		8260B	08/22/11	20
Isopropylbenzene	120	3.7	20	ug/l		8260B	08/22/11	20
Methyl tert-butyl ether	2.1	0.27	1.0	ug/l		8260B	08/20/11	1
Naphthalene	140	0.69	5.0	ug/l		8260B	08/20/11	1
Toluene	780	3.3	100	ug/l		8260B	08/22/11	20
Total Xylenes	2100	14.	60	ug/l		8260B	08/22/11	20
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	08/20/11	1
Dibromofluoromethane	97.0			% Rec.		8260B	08/20/11	1
4-Bromofluorobenzene	90.9			% Rec.		8260B	08/20/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Reported: 08/23/11 15:11 Printed: 08/23/11 15:12

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L532033-02	WG551424	SAMP	Naphthalene	R1821730	J
L532033-03	WG551425	SAMP	Isopropylbenzene	R1823230	J4
	WG551425	SAMP	Toluene	R1823230	J
L532033-04	WG551425	SAMP	Isopropylbenzene	R1823230	J4

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

B024

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		08/15/11	1431	2	X		L552033-01
MW-2	Grab	GW		08/15/11	1422	2	X		-02
MW-3	Grab	GW		08/15/11	1409	2	X		-03
MW-4	Grab	GW		08/15/11	1358	2	X		-04
MW-51	Grab	GW		08/15/11	1445	2	X		-05

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

pH _____ Temp _____

Remarks: D/ Priority

4341 8616 1680

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
	8/18/11	1050			COL SE D/C
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4	Bottles Received: 10+1TB
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/19/11	Time: 0900
				pH Checked:	NCF:

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

October 25, 2011

Ms. Sara Giordano
Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

RE: Project: Arch Street QTR
Pace Project No.: 3055452

Dear Ms. Giordano:
Enclosed are the analytical results for sample(s) received by the laboratory on October 11, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Raymond Rios

Raymond Rios, Jr.

raymond.rios@pacelabs.com
Project Manager

Enclosures

cc: Insite Group, Insite Group, Inc.

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CERTIFICATIONS

Project: Arch Street QTR
Pace Project No.: 3055452

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE ANALYTE COUNT

Project: Arch Street QTR
Pace Project No.: 3055452

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3055452001	MW-1	EPA 8260	JAS	10	PASI-PA
3055452002	MW-2	EPA 8260	JAS	10	PASI-PA
3055452003	MW-3	EPA 8260	JAS	10	PASI-PA
3055452004	MW-4	EPA 8260	JAS	10	PASI-PA
3055452005	MW-51	EPA 8260	JAS	10	PASI-PA

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ANALYTICAL RESULTS

Project: Arch Street QTR
Pace Project No.: 3055452

Sample: MW-1 **Lab ID: 3055452001** Collected: 10/07/11 14:45 Received: 10/11/11 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**514**	ug/L	25.0	25		10/20/11 09:42	71-43-2	
Ethylbenzene	**1050**	ug/L	25.0	25		10/20/11 09:42	100-41-4	
Isopropylbenzene (Cumene)	**62.4**	ug/L	1.0	1		10/20/11 09:15	98-82-8	
Methyl-tert-butyl ether	**60.4**	ug/L	1.0	1		10/20/11 09:15	1634-04-4	
Naphthalene	**310**	ug/L	2.0	1		10/20/11 09:15	91-20-3	
Toluene	**208**	ug/L	1.0	1		10/20/11 09:15	108-88-3	
Xylene (Total)	**2820**	ug/L	75.0	25		10/20/11 09:42	1330-20-7	
Toluene-d8 (S)	116	%	70-130	1		10/20/11 09:15	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130	1		10/20/11 09:15	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		10/20/11 09:15	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street QTR
Pace Project No.: 3055452

Sample: MW-2 **Lab ID: 3055452002** Collected: 10/07/11 14:26 Received: 10/11/11 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1740**	ug/L	25.0	25		10/20/11 10:34	71-43-2	
Ethylbenzene	**554**	ug/L	25.0	25		10/20/11 10:34	100-41-4	
Isopropylbenzene (Cumene)	**142**	ug/L	1.0	1		10/20/11 10:08	98-82-8	
Methyl-tert-butyl ether	**2.5**	ug/L	1.0	1		10/20/11 10:08	1634-04-4	
Naphthalene	**136**	ug/L	2.0	1		10/20/11 10:08	91-20-3	
Toluene	**797**	ug/L	25.0	25		10/20/11 10:34	108-88-3	
Xylene (Total)	**1860**	ug/L	75.0	25		10/20/11 10:34	1330-20-7	
Toluene-d8 (S)	103	%	70-130	1		10/20/11 10:08	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130	1		10/20/11 10:08	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		10/20/11 10:08	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street QTR
Pace Project No.: 3055452

Sample: MW-3 **Lab ID: 3055452003** Collected: 10/07/11 14:12 Received: 10/11/11 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**24.1**	ug/L	1.0	1		10/20/11 08:50	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/20/11 08:50	100-41-4	
Isopropylbenzene (Cumene)	**2.4**	ug/L	1.0	1		10/20/11 08:50	98-82-8	
Methyl-tert-butyl ether	**4.3**	ug/L	1.0	1		10/20/11 08:50	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		10/20/11 08:50	91-20-3	
Toluene	**2.8**	ug/L	1.0	1		10/20/11 08:50	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/20/11 08:50	1330-20-7	
Toluene-d8 (S)	97	%	70-130	1		10/20/11 08:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130	1		10/20/11 08:50	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		10/20/11 08:50	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street QTR
Pace Project No.: 3055452

Sample: MW-4 **Lab ID: 3055452004** Collected: 10/07/11 13:50 Received: 10/11/11 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		10/20/11 09:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/20/11 09:28	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		10/20/11 09:28	98-82-8	
Methyl-tert-butyl ether	**2.2**	ug/L	1.0	1		10/20/11 09:28	1634-04-4	
Naphthalene	**7.7**	ug/L	2.0	1		10/20/11 09:28	91-20-3	
Toluene	ND	ug/L	1.0	1		10/20/11 09:28	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/20/11 09:28	1330-20-7	
Toluene-d8 (S)	92	%	70-130	1		10/20/11 09:28	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130	1		10/20/11 09:28	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		10/20/11 09:28	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch Street QTR
Pace Project No.: 3055452

Sample: MW-51 **Lab ID: 3055452005** Collected: 10/07/11 14:30 Received: 10/11/11 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1880**	ug/L	25.0	25		10/20/11 10:21	71-43-2	
Ethylbenzene	**648**	ug/L	25.0	25		10/20/11 10:21	100-41-4	
Isopropylbenzene (Cumene)	**156**	ug/L	1.0	1		10/20/11 09:55	98-82-8	
Methyl-tert-butyl ether	**2.4**	ug/L	1.0	1		10/20/11 09:55	1634-04-4	
Naphthalene	**143**	ug/L	2.0	1		10/20/11 09:55	91-20-3	
Toluene	**833**	ug/L	25.0	25		10/20/11 10:21	108-88-3	
Xylene (Total)	**2050**	ug/L	75.0	25		10/20/11 10:21	1330-20-7	
Toluene-d8 (S)	105	%	70-130	1		10/20/11 09:55	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130	1		10/20/11 09:55	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		10/20/11 09:55	17060-07-0	

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QUALITY CONTROL DATA

Project: Arch Street QTR
Pace Project No.: 3055452

QC Batch: MSV/10819
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3055452001, 3055452002

METHOD BLANK: 356835 Matrix: Water
Associated Lab Samples: 3055452001, 3055452002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/20/11 00:41	
Ethylbenzene	ug/L	ND	1.0	10/20/11 00:41	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	10/20/11 00:41	
Methyl-tert-butyl ether	ug/L	ND	1.0	10/20/11 00:41	
Naphthalene	ug/L	ND	2.0	10/20/11 00:41	
Toluene	ug/L	ND	1.0	10/20/11 00:41	
Xylene (Total)	ug/L	ND	3.0	10/20/11 00:41	
1,2-Dichloroethane-d4 (S)	%	105	70-130	10/20/11 00:41	
4-Bromofluorobenzene (S)	%	99	70-130	10/20/11 00:41	
Toluene-d8 (S)	%	91	70-130	10/20/11 00:41	

LABORATORY CONTROL SAMPLE: 356836

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.0	95	69.8-120	
Ethylbenzene	ug/L	20	18.5	93	70.9-124	
Isopropylbenzene (Cumene)	ug/L	20	19.7	98	68.3-129	
Methyl-tert-butyl ether	ug/L	20	25.2	126	66.4-144	
Naphthalene	ug/L	20	21.2	106	61-135	
Toluene	ug/L	20	18.7	93	71.5-120	
Xylene (Total)	ug/L	60	58.2	97	70-129	
1,2-Dichloroethane-d4 (S)	%			109	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			90	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 357126 357127

Parameter	Units	3055457001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	17.4	17.4	87	87	70-130	.07	
Ethylbenzene	ug/L	ND	20	20	17.9	18.0	90	90	70-130	.6	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	18.2	18.5	91	92	70-130	1	
Methyl-tert-butyl ether	ug/L	ND	20	20	23.3	23.2	117	116	70-130	.6	
Naphthalene	ug/L	ND	20	20	17.8	18.6	89	93	70-130	4	
Toluene	ug/L	ND	20	20	17.7	17.5	88	88	70-130	.7	
Xylene (Total)	ug/L	ND	60	60	54.2	54.5	90	91	70-130	.6	
1,2-Dichloroethane-d4 (S)	%						108	108	70-130		
4-Bromofluorobenzene (S)	%						98	98	70-130		
Toluene-d8 (S)	%						92	92	70-130		

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QUALITY CONTROL DATA

Project: Arch Street QTR
Pace Project No.: 3055452

QC Batch: MSV/10820 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3055452003, 3055452004, 3055452005

METHOD BLANK: 356837 Matrix: Water
Associated Lab Samples: 3055452003, 3055452004, 3055452005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/20/11 00:55	
Ethylbenzene	ug/L	ND	1.0	10/20/11 00:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	10/20/11 00:55	
Methyl-tert-butyl ether	ug/L	ND	1.0	10/20/11 00:55	
Naphthalene	ug/L	ND	2.0	10/20/11 00:55	
Toluene	ug/L	ND	1.0	10/20/11 00:55	
Xylene (Total)	ug/L	ND	3.0	10/20/11 00:55	
1,2-Dichloroethane-d4 (S)	%	106	70-130	10/20/11 00:55	
4-Bromofluorobenzene (S)	%	97	70-130	10/20/11 00:55	
Toluene-d8 (S)	%	90	70-130	10/20/11 00:55	

LABORATORY CONTROL SAMPLE: 356838

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.2	96	69.8-120	
Ethylbenzene	ug/L	20	20.1	101	70.9-124	
Isopropylbenzene (Cumene)	ug/L	20	19.9	100	68.3-129	
Methyl-tert-butyl ether	ug/L	20	24.9	125	66.4-144	
Naphthalene	ug/L	20	17.1	86	61-135	
Toluene	ug/L	20	19.8	99	71.5-120	
Xylene (Total)	ug/L	60	61.4	102	70-129	
1,2-Dichloroethane-d4 (S)	%			106	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			91	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 357128 357129

Parameter	Units	3055546001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	18.0	16.5	90	82	70-130	9	
Ethylbenzene	ug/L	ND	20	20	18.6	16.5	93	83	70-130	12	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	19.1	17.1	95	85	70-130	11	
Methyl-tert-butyl ether	ug/L	8.5	20	20	31.4	28.0	115	98	70-130	11	
Naphthalene	ug/L	ND	20	20	17.2	15.8	86	79	70-130	9	
Toluene	ug/L	ND	20	20	18.5	16.8	92	84	70-130	10	
Xylene (Total)	ug/L	ND	60	60	56.8	51.5	95	86	70-130	10	
1,2-Dichloroethane-d4 (S)	%						106	106	70-130		
4-Bromofluorobenzene (S)	%						98	97	70-130		
Toluene-d8 (S)	%						90	93	70-130		

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: Arch Street QTR
Pace Project No.: 3055452

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Arch Street QTR
Pace Project No.: 3055452

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3055452001	MW-1	EPA 8260	MSV/10819		
3055452002	MW-2	EPA 8260	MSV/10819		
3055452003	MW-3	EPA 8260	MSV/10820		
3055452004	MW-4	EPA 8260	MSV/10820		
3055452005	MW-51	EPA 8260	MSV/10820		

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — **Required** Client Information:

Company:	Insite Group, Inc
Address:	611 South Irvine Avene
	Sharon, PA 16146
Email To:	lab@insitegroup.org
Phone: 724-347-2101	Fax: 724-347-2139
Requested Due Date/TAT:	

Section B — **Required** Project Information:

Report To:	Sara Giordano
Copy To:	
Purchase Order No.:	
Project Name:	Arch Street QTR
Project Number:	03-07315

Section C — Invoice Information:

Attention:	Sara Giordano
Company Name:	Same
Address:	Same
Pace Quote Reference:	
Pace Project Manager:	Ray Rios
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Kittaning PA

Section D — **Required** Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA 8260 Volatiles (Old PA UST shortlist - unleaded)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			10/07/11	1445		3				X					X			001
2	MW-2	WT	G			10/07/11	1426		3				X					X			002
3	MW-3	WT	G			10/07/11	1412		3				X					X			003
4	MW-4	WT	G			10/07/11	1350		3				X					X			004
5	MW-51	WT	G			10/07/11	1430		3				X					X			005
6																					
7																					
8																					
9																					
10																					
11																					
12																					

30550452

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Kristin Kelly / IET	10/7/11	9:47	Jeven Sikes / Pace	10-11-11	1030	1.5	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: George Mueller

SIGNATURE of SAMPLER: George Mueller — DATE Signed (MM/DD/YY): 10/7/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Wednesday April 04, 2012

Report Number: L567701
Samples Received: 03/30/12
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 04, 2012

ESC Sample # : L567701-01

Date Received : March 30, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/26/12 14:33

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	440	1.8	10.	ug/l		8260B	04/01/12	10
Ethylbenzene	1700	2.7	10.	ug/l		8260B	04/01/12	10
Isopropylbenzene	140	1.8	10	ug/l		8260B	04/01/12	10
Methyl tert-butyl ether	28.	2.7	10.	ug/l		8260B	04/01/12	10
Naphthalene	540	6.9	50.	ug/l		8260B	04/01/12	10
Toluene	180	1.6	50	ug/l		8260B	04/01/12	10
Total Xylenes	4300	36.	150	ug/l		8260B	04/04/12	50
Surrogate Recovery								
Toluene-d8	98.5			% Rec.		8260B	04/01/12	10
Dibromofluoromethane	87.7			% Rec.		8260B	04/01/12	10
4-Bromofluorobenzene	93.5			% Rec.		8260B	04/01/12	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 04, 2012

ESC Sample # : L567701-02

Date Received : March 30, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/26/12 14:24

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1300	3.6	20.	ug/l		8260B	04/04/12	20
Ethylbenzene	500	1.4	5.0	ug/l		8260B	04/01/12	5
Isopropylbenzene	140	0.92	5.	ug/l		8260B	04/01/12	5
Methyl tert-butyl ether	1.5	1.3	5.0	ug/l	J	8260B	04/01/12	5
Naphthalene	100	3.5	25.	ug/l		8260B	04/01/12	5
Toluene	440	0.82	25.	ug/l		8260B	04/01/12	5
Total Xylenes	1400	3.6	15.	ug/l		8260B	04/01/12	5
Surrogate Recovery								
Toluene-d8	97.7			% Rec.		8260B	04/01/12	5
Dibromofluoromethane	88.6			% Rec.		8260B	04/01/12	5
4-Bromofluorobenzene	101.			% Rec.		8260B	04/01/12	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 04, 2012

ESC Sample # : L567701-03

Date Received : March 30, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/26/12 14:09

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	13.	0.18	1.0	ug/l		8260B	04/01/12	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	04/01/12	1
Isopropylbenzene	1.9	0.18	1.	ug/l		8260B	04/01/12	1
Methyl tert-butyl ether	2.3	0.27	1.0	ug/l		8260B	04/01/12	1
Naphthalene	U	0.69	5.0	ug/l		8260B	04/01/12	1
Toluene	1.4	0.16	5.	ug/l	J	8260B	04/01/12	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/01/12	1
Surrogate Recovery								
Toluene-d8	95.4			% Rec.		8260B	04/01/12	1
Dibromofluoromethane	91.2			% Rec.		8260B	04/01/12	1
4-Bromofluorobenzene	97.5			% Rec.		8260B	04/01/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 04, 2012

ESC Sample # : L567701-04

Date Received : March 30, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/26/12 14:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.18	1.0	ug/l		8260B	04/01/12	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	04/01/12	1
Isopropylbenzene	U	0.18	1.	ug/l		8260B	04/01/12	1
Methyl tert-butyl ether	0.39	0.27	1.0	ug/l	J	8260B	04/01/12	1
Naphthalene	U	0.69	5.0	ug/l		8260B	04/01/12	1
Toluene	U	0.16	5.	ug/l		8260B	04/01/12	1
Total Xylenes	U	0.73	3.	ug/l		8260B	04/01/12	1
Surrogate Recovery								
Toluene-d8	93.7			% Rec.		8260B	04/01/12	1
Dibromofluoromethane	93.0			% Rec.		8260B	04/01/12	1
4-Bromofluorobenzene	100.			% Rec.		8260B	04/01/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 04, 2012

ESC Sample # : L567701-05

Date Received : March 30, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/26/12 14:45

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1400	3.6	20.	ug/l		8260B	04/04/12	20
Ethylbenzene	460	1.4	5.0	ug/l		8260B	04/01/12	5
Isopropylbenzene	120	0.92	5.	ug/l		8260B	04/01/12	5
Methyl tert-butyl ether	1.5	1.3	5.0	ug/l	J	8260B	04/01/12	5
Naphthalene	98.	3.5	25.	ug/l		8260B	04/01/12	5
Toluene	450	0.82	25.	ug/l		8260B	04/01/12	5
Total Xylenes	1300	3.6	15.	ug/l		8260B	04/01/12	5
Surrogate Recovery								
Toluene-d8	95.3			% Rec.		8260B	04/01/12	5
Dibromofluoromethane	87.7			% Rec.		8260B	04/01/12	5
4-Bromofluorobenzene	95.5			% Rec.		8260B	04/01/12	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L567701-02	WG585709	SAMP	Methyl tert-butyl ether	R2101313	J
L567701-03	WG585709	SAMP	Toluene	R2101313	J
L567701-04	WG585709	SAMP	Methyl tert-butyl ether	R2101313	J
L567701-05	WG585709	SAMP	Methyl tert-butyl ether	R2101313	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice N Y/O

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:

Email? __No✓Yes
FAX? ✓No__Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		03/26/12	1433	2	X		L567101-01
MW-2	Grab	GW		03/26/12	1424	2	X		02
MW-3	Grab	GW		03/26/12	1409	2	X		03
MW-4	Grab	GW		03/26/12	1400	2	X		04
MW-51	Grab	GW		03/26/12	1445	2	X		05

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: DI Priority

Job 0624 5216

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Adam Gaines	3/29/12	1100			OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.2° Bottles Received: 10	COC Sig
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/30/12 Time: 0900	pH Checked: NCF:

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Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Tuesday June 19, 2012

Report Number: L580121
Samples Received: 06/13/12
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 19, 2012

ESC Sample # : L580121-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Sample ID : MW-1

Collected By : Jennifer Swogger
Collection Date : 06/07/12 15:59

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	440	1.8	10.	ug/l		8260B	06/17/12	10
Ethylbenzene	1300	2.7	10.	ug/l		8260B	06/17/12	10
Isopropylbenzene	120	1.8	10	ug/l		8260B	06/17/12	10
Methyl tert-butyl ether	U	2.7	10.	ug/l		8260B	06/17/12	10
Naphthalene	520	6.9	50.	ug/l		8260B	06/17/12	10
Toluene	170	1.6	50	ug/l		8260B	06/17/12	10
Total Xylenes	3200	7.3	30	ug/l		8260B	06/17/12	10
Surrogate Recovery								
Toluene-d8	97.9			% Rec.		8260B	06/17/12	10
Dibromofluoromethane	92.7			% Rec.		8260B	06/17/12	10
4-Bromofluorobenzene	103.			% Rec.		8260B	06/17/12	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 19, 2012

ESC Sample # : L580121-02

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Jennifer Swogger
Collection Date : 06/07/12 15:48

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1500	1.8	10.	ug/l		8260B	06/14/12	10
Ethylbenzene	520	2.7	10.	ug/l		8260B	06/14/12	10
Isopropylbenzene	120	1.8	10	ug/l		8260B	06/14/12	10
Methyl tert-butyl ether	U	2.7	10.	ug/l		8260B	06/14/12	10
Naphthalene	110	6.9	50.	ug/l		8260B	06/14/12	10
Toluene	670	1.6	50	ug/l		8260B	06/14/12	10
Total Xylenes	1600	7.3	30	ug/l		8260B	06/14/12	10
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	06/14/12	10
Dibromofluoromethane	99.7			% Rec.		8260B	06/14/12	10
4-Bromofluorobenzene	98.8			% Rec.		8260B	06/14/12	10

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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 19, 2012

ESC Sample # : L580121-03

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Jennifer Swogger
Collection Date : 06/07/12 15:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	42.	0.18	1.0	ug/l		8260B	06/14/12	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	06/14/12	1
Isopropylbenzene	4.8	0.18	1.	ug/l		8260B	06/14/12	1
Methyl tert-butyl ether	2.4	0.27	1.0	ug/l		8260B	06/14/12	1
Naphthalene	U	0.69	5.0	ug/l		8260B	06/14/12	1
Toluene	4.7	0.16	5.	ug/l	J	8260B	06/14/12	1
Total Xylenes	3.2	0.73	3.	ug/l		8260B	06/14/12	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/14/12	1
Dibromofluoromethane	102.			% Rec.		8260B	06/14/12	1
4-Bromofluorobenzene	102.			% Rec.		8260B	06/14/12	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

June 19, 2012

ESC Sample # : L580121-04

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Jennifer Swogger
Collection Date : 06/07/12 15:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.39	0.18	1.0	ug/l	J	8260B	06/14/12	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	06/14/12	1
Isopropylbenzene	U	0.18	1.	ug/l		8260B	06/14/12	1
Methyl tert-butyl ether	1.7	0.27	1.0	ug/l		8260B	06/14/12	1
Naphthalene	U	0.69	5.0	ug/l		8260B	06/14/12	1
Toluene	0.36	0.16	5.	ug/l	J	8260B	06/14/12	1
Total Xylenes	U	0.73	3.	ug/l		8260B	06/14/12	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/14/12	1
Dibromofluoromethane	103.			% Rec.		8260B	06/14/12	1
4-Bromofluorobenzene	97.3			% Rec.		8260B	06/14/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
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June 19, 2012

ESC Sample # : L580121-05

Site ID : 03-07315

Project # : ARCH STREET

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Sample ID : MW-8

Collected By : Jennifer Swogger
Collection Date : 06/07/12 16:40

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	450	1.8	10.	ug/l		8260B	06/14/12	10
Ethylbenzene	200	2.7	10.	ug/l		8260B	06/14/12	10
Isopropylbenzene	15.	1.8	10	ug/l		8260B	06/14/12	10
Methyl tert-butyl ether	150	2.7	10.	ug/l		8260B	06/14/12	10
Naphthalene	43.	6.9	50.	ug/l	J	8260B	06/14/12	10
Toluene	100	1.6	50	ug/l		8260B	06/14/12	10
Total Xylenes	820	7.3	30	ug/l		8260B	06/14/12	10
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	06/14/12	10
Dibromofluoromethane	101.			% Rec.		8260B	06/14/12	10
4-Bromofluorobenzene	100.			% Rec.		8260B	06/14/12	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
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June 19, 2012

ESC Sample # : L580121-06

Site ID : 03-07315

Project # : ARCH STREET

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Sample ID : MW-9

Collected By : Jennifer Swogger
Collection Date : 06/07/12 17:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	330	1.8	10.	ug/l		8260B	06/14/12	10
Ethylbenzene	89.	2.7	10.	ug/l		8260B	06/14/12	10
Isopropylbenzene	20	1.8	10	ug/l		8260B	06/14/12	10
Methyl tert-butyl ether	130	2.7	10.	ug/l		8260B	06/14/12	10
Naphthalene	44.	6.9	50.	ug/l	J	8260B	06/14/12	10
Toluene	16.	1.6	50	ug/l	J	8260B	06/14/12	10
Total Xylenes	78.	7.3	30	ug/l		8260B	06/14/12	10
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/14/12	10
Dibromofluoromethane	102.			% Rec.		8260B	06/14/12	10
4-Bromofluorobenzene	97.3			% Rec.		8260B	06/14/12	10

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REPORT OF ANALYSIS

Ms. Sara Giordano
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June 19, 2012

ESC Sample # : L580121-07

Date Received : June 13, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH STREET

Collected By : Jennifer Swogger
Collection Date : 06/07/12 15:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	480	1.8	10.	ug/l		8260B	06/14/12	10
Ethylbenzene	1000	2.7	10.	ug/l		8260B	06/14/12	10
Isopropylbenzene	58.	1.8	10	ug/l		8260B	06/14/12	10
Methyl tert-butyl ether	46.	2.7	10.	ug/l		8260B	06/14/12	10
Naphthalene	290	6.9	50.	ug/l		8260B	06/14/12	10
Toluene	160	1.6	50	ug/l		8260B	06/14/12	10
Total Xylenes	2600	7.3	30	ug/l		8260B	06/14/12	10
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	06/14/12	10
Dibromofluoromethane	101.			% Rec.		8260B	06/14/12	10
4-Bromofluorobenzene	97.7			% Rec.		8260B	06/14/12	10

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L580121-03	WG597768	SAMP	Toluene	R2212154	J
L580121-04	WG597768	SAMP	Benzene	R2212154	J
	WG597768	SAMP	Toluene	R2212154	J
L580121-05	WG597768	SAMP	Naphthalene	R2212154	J
L580121-06	WG597768	SAMP	Naphthalene	R2212154	J
	WG597768	SAMP	Toluene	R2212154	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Jennifer Swogger

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs MJ	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		06/07/12	1559	2	X		L580121-01
MW-2	Grab	GW		06/07/12	1548	2	X		02
MW-3	Grab	GW		06/07/12	1530	2	X		03
MW-4	Grab	GW		06/07/12	1515	~~2~~ 1	X		04
MW-8	Grab	GW		06/07/12	1640	2	X		05
MW-9	Grab	GW		06/07/12	1730	2	X		06
MW-51	Grab	GW		06/07/12	1500	2	X		07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 Priority 5274 8784 1759

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	6/12/12	1030	[signature]		OL TD COCSI
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C Bottles Received: 13	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) C. [signature]	Date: 6/13/12 Time: 0900	pH Checked: NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday September 06, 2012

Report Number: L592837
Samples Received: 08/31/12
Client Project: ARCH ST

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-01

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 15:49

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	230	3.3	10.	ug/l		8260B	09/01/12	10
Ethylbenzene	440	3.8	10.	ug/l		8260B	09/01/12	10
Isopropylbenzene	38.	3.3	10	ug/l		8260B	09/01/12	10
Methyl tert-butyl ether	36.	3.7	10.	ug/l		8260B	09/01/12	10
Naphthalene	160	5.9	50.	ug/l		8260B	09/01/12	10
Toluene	55.	7.8	50	ug/l		8260B	09/01/12	10
Total Xylenes	930	11.	30	ug/l		8260B	09/01/12	10
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	09/01/12	10
Dibromofluoromethane	87.5			% Rec.		8260B	09/01/12	10
4-Bromofluorobenzene	118.			% Rec.		8260B	09/01/12	10

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-02

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 15:38

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1300	3.3	10.	ug/l		8260B	09/01/12	10
Ethylbenzene	440	3.8	10.	ug/l		8260B	09/01/12	10
Isopropylbenzene	100	3.3	10	ug/l		8260B	09/01/12	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	09/01/12	10
Naphthalene	98.	5.9	50.	ug/l		8260B	09/01/12	10
Toluene	470	7.8	50	ug/l		8260B	09/01/12	10
Total Xylenes	1500	11.	30	ug/l		8260B	09/01/12	10
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	09/01/12	10
Dibromofluoromethane	87.4			% Rec.		8260B	09/01/12	10
4-Bromofluorobenzene	113.			% Rec.		8260B	09/01/12	10

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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-03

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 15:03

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	9.6	0.33	1.0	ug/l		8260B	09/01/12	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/01/12	1
Isopropylbenzene	1.1	0.33	1.	ug/l		8260B	09/01/12	1
Methyl tert-butyl ether	2.3	0.37	1.0	ug/l		8260B	09/01/12	1
Naphthalene	U	0.59	5.0	ug/l		8260B	09/01/12	1
Toluene	1.5	0.78	5.	ug/l	J	8260B	09/01/12	1
Total Xylenes	U	1.1	3.	ug/l		8260B	09/01/12	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	09/01/12	1
Dibromofluoromethane	91.9			% Rec.		8260B	09/01/12	1
4-Bromofluorobenzene	111.			% Rec.		8260B	09/01/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-04

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 14:52

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	08/31/12	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/31/12	1
Isopropylbenzene	U	0.33	1.	ug/l		8260B	08/31/12	1
Methyl tert-butyl ether	1.6	0.37	1.0	ug/l		8260B	08/31/12	1
Naphthalene	U	0.59	5.0	ug/l		8260B	08/31/12	1
Toluene	U	0.78	5.	ug/l		8260B	08/31/12	1
Total Xylenes	U	1.1	3.	ug/l		8260B	08/31/12	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	08/31/12	1
Dibromofluoromethane	91.8			% Rec.		8260B	08/31/12	1
4-Bromofluorobenzene	100.			% Rec.		8260B	08/31/12	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-05

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 15:45

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1100	3.3	10.	ug/l		8260B	09/01/12	10
Ethylbenzene	350	3.8	10.	ug/l		8260B	09/01/12	10
Isopropylbenzene	80	3.3	10	ug/l		8260B	09/01/12	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	09/01/12	10
Naphthalene	63.	5.9	50.	ug/l		8260B	09/01/12	10
Toluene	380	7.8	50	ug/l		8260B	09/01/12	10
Total Xylenes	1200	11.	30	ug/l		8260B	09/01/12	10
Surrogate Recovery								
Toluene-d8	99.6			% Rec.		8260B	09/01/12	10
Dibromofluoromethane	91.4			% Rec.		8260B	09/01/12	10
4-Bromofluorobenzene	117.			% Rec.		8260B	09/01/12	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-06

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-8

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 15:13

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	3300	16.	50.	ug/l		8260B	09/06/12	50
Ethylbenzene	330	3.8	10.	ug/l		8260B	09/01/12	10
Isopropylbenzene	18.	3.3	10	ug/l		8260B	09/01/12	10
Methyl tert-butyl ether	2500	18.	50.	ug/l		8260B	09/06/12	50
Naphthalene	23.	5.9	50.	ug/l	J	8260B	09/01/12	10
Toluene	80	7.8	50	ug/l		8260B	09/01/12	10
Total Xylenes	1000	11.	30	ug/l		8260B	09/01/12	10
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	09/01/12	10
Dibromofluoromethane	91.6			% Rec.		8260B	09/01/12	10
4-Bromofluorobenzene	114.			% Rec.		8260B	09/01/12	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

September 06, 2012

ESC Sample # : L592837-07

Date Received : August 31, 2012
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-9

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/29/12 15:29

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	350	3.3	10.	ug/l		8260B	09/01/12	10
Ethylbenzene	250	3.8	10.	ug/l		8260B	09/01/12	10
Isopropylbenzene	23.	3.3	10	ug/l		8260B	09/01/12	10
Methyl tert-butyl ether	2700	18.	50.	ug/l		8260B	09/06/12	50
Naphthalene	13.	5.9	50.	ug/l	J	8260B	09/01/12	10
Toluene	13.	7.8	50	ug/l	J	8260B	09/01/12	10
Total Xylenes	260	11.	30	ug/l		8260B	09/01/12	10
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	09/01/12	10
Dibromofluoromethane	91.0			% Rec.		8260B	09/01/12	10
4-Bromofluorobenzene	118.			% Rec.		8260B	09/01/12	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L592837-03	WG610609	SAMP	Toluene	R2328018	J
L592837-06	WG610609	SAMP	Naphthalene	R2328018	J
L592837-07	WG610609	SAMP	Naphthalene	R2328018	J
	WG610609	SAMP	Toluene	R2328018	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

E146

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Analysis/Container/Preservative

ain of Custody
age 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122

Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Project Description: Quarterly Groundwater Monitoring

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch St

ESC Key: INSITE-060712S

Collected by: George Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): George Mueller

Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
____ Same Day. 200%
____ Next Day. 100%
____ Two Day 50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		08/29/12	1549	2	X	L592837.01	L5[illegible]
MW-2	Grab	GW		08/29/12	1538	2	X	02	
MW-3	Grab	GW		08/29/12	1503	2	X	03	
MW-4	Grab	GW		08/29/12	1452	2	X	04	
MW-51	Grab	GW		08/29/12	1545	2	X	05	
MW-8	Grab	GW		08/29/12	1513	2	X	06	
MW-9	Grab	GW		08/29/12	1529	2	X	07	

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 PRIORITY

5274 8791 3626 Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐		Condition: (lab use only) TD
Kristin L Kelly	8/30/12	206pm				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.8°	Bottles Received: 14V	COCSI
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Matthew Morland	Date: 8/31/12	Time: 0945	pH Checked: NCF:

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

December 06, 2012

Ms. Sara Giordano
Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

RE: Project: Arch St - Qtr
Pace Project No.: 3082431

Dear Ms. Giordano:
Enclosed are the analytical results for sample(s) received by the laboratory on November 21, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Penny Westrick

penny.westrick@pacelabs.com
Project Manager

Enclosures

cc: Insite Group, Insite Group, Inc.

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CERTIFICATIONS

Project: Arch St - Qtr
Pace Project No.: 3082431

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE ANALYTE COUNT

Project: Arch St - Qtr
Pace Project No.: 3082431

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3082431001	MW-1	EPA 8260	RES	10	PASI-PA
3082431002	MW-2	EPA 8260	RES	10	PASI-PA
3082431003	MW-3	EPA 8260	RES	10	PASI-PA
3082431004	MW-4	EPA 8260	RES	10	PASI-PA
3082431005	MW-8	EPA 8260	RES	10	PASI-PA
3082431006	MW-9	EPA 8260	RES	10	PASI-PA
3082431007	MW-51	EPA 8260	RES	10	PASI-PA

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-1 **Lab ID: 3082431001** Collected: 11/14/12 15:50 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**284**	ug/L	1.0	1		11/26/12 18:05	71-43-2	
Ethylbenzene	**564**	ug/L	25.0	25		11/26/12 18:31	100-41-4	
Isopropylbenzene (Cumene)	**37.5**	ug/L	1.0	1		11/26/12 18:05	98-82-8	
Methyl-tert-butyl ether	**45.1**	ug/L	1.0	1		11/26/12 18:05	1634-04-4	
Naphthalene	**206**	ug/L	2.0	1		11/26/12 18:05	91-20-3	
Toluene	**84.3**	ug/L	1.0	1		11/26/12 18:05	108-88-3	
Xylene (Total)	**1210**	ug/L	75.0	25		11/26/12 18:31	1330-20-7	
Surrogates								
Toluene-d8 (S)	91	%	85-115	1		11/26/12 18:05	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-115	1		11/26/12 18:05	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-119	1		11/26/12 18:05	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-2 **Lab ID: 3082431002** Collected: 11/14/12 15:32 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1610**	ug/L	25.0	25		11/26/12 19:22	71-43-2	
Ethylbenzene	**363**	ug/L	1.0	1		11/26/12 18:57	100-41-4	
Isopropylbenzene (Cumene)	**135**	ug/L	1.0	1		11/26/12 18:57	98-82-8	
Methyl-tert-butyl ether	**2.4**	ug/L	1.0	1		11/26/12 18:57	1634-04-4	
Naphthalene	**102**	ug/L	2.0	1		11/26/12 18:57	91-20-3	
Toluene	**366**	ug/L	1.0	1		11/26/12 18:57	108-88-3	
Xylene (Total)	**1140**	ug/L	75.0	25		11/26/12 19:22	1330-20-7	
Surrogates								
Toluene-d8 (S)	97	%	85-115	1		11/26/12 18:57	2037-26-5	
4-Bromofluorobenzene (S)	102	%	85-115	1		11/26/12 18:57	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-119	1		11/26/12 18:57	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-3 **Lab ID: 3082431003** Collected: 11/14/12 14:57 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**6.3**	ug/L	1.0	1		11/26/12 16:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/26/12 16:46	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/26/12 16:46	98-82-8	
Methyl-tert-butyl ether	**5.1**	ug/L	1.0	1		11/26/12 16:46	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		11/26/12 16:46	91-20-3	
Toluene	**1.0**	ug/L	1.0	1		11/26/12 16:46	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/26/12 16:46	1330-20-7	
Surrogates								
Toluene-d8 (S)	96	%	85-115	1		11/26/12 16:46	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-115	1		11/26/12 16:46	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	77-119	1		11/26/12 16:46	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-4 **Lab ID: 3082431004** Collected: 11/14/12 14:45 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	ND	ug/L	1.0	1		11/26/12 17:13	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/26/12 17:13	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/26/12 17:13	98-82-8	
Methyl-tert-butyl ether	**1.2**	ug/L	1.0	1		11/26/12 17:13	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		11/26/12 17:13	91-20-3	
Toluene	ND	ug/L	1.0	1		11/26/12 17:13	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/26/12 17:13	1330-20-7	
Surrogates								
Toluene-d8 (S)	96	%	85-115	1		11/26/12 17:13	2037-26-5	
4-Bromofluorobenzene (S)	101	%	85-115	1		11/26/12 17:13	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	77-119	1		11/26/12 17:13	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-8 **Lab ID: 3082431005** Collected: 11/14/12 15:45 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**3070**	ug/L	25.0	25		11/26/12 21:04	71-43-2	
Ethylbenzene	**473**	ug/L	25.0	25		11/26/12 21:04	100-41-4	
Isopropylbenzene (Cumene)	**24.4**	ug/L	1.0	1		11/26/12 20:39	98-82-8	
Methyl-tert-butyl ether	**2050**	ug/L	25.0	25		11/26/12 21:04	1634-04-4	
Naphthalene	**89.5**	ug/L	2.0	1		11/26/12 20:39	91-20-3	
Toluene	**131**	ug/L	1.0	1		11/26/12 20:39	108-88-3	
Xylene (Total)	**801**	ug/L	3.0	1		11/26/12 20:39	1330-20-7	
Surrogates								
Toluene-d8 (S)	97	%	85-115	1		11/26/12 20:39	2037-26-5	
4-Bromofluorobenzene (S)	102	%	85-115	1		11/26/12 20:39	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-119	1		11/26/12 20:39	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-9 **Lab ID: 3082431006** Collected: 11/14/12 15:10 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**378**	ug/L	1.0	1		11/26/12 17:39	71-43-2	
Ethylbenzene	**227**	ug/L	1.0	1		11/26/12 17:39	100-41-4	
Isopropylbenzene (Cumene)	**32.5**	ug/L	1.0	1		11/26/12 17:39	98-82-8	
Methyl-tert-butyl ether	**572**	ug/L	5.0	5		11/27/12 20:51	1634-04-4	
Naphthalene	**22.7**	ug/L	2.0	1		11/26/12 17:39	91-20-3	
Toluene	**8.9**	ug/L	1.0	1		11/26/12 17:39	108-88-3	
Xylene (Total)	**158**	ug/L	3.0	1		11/26/12 17:39	1330-20-7	
Surrogates								
Toluene-d8 (S)	95	%	85-115	1		11/26/12 17:39	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-115	1		11/26/12 17:39	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	77-119	1		11/26/12 17:39	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch St - Qtr
Pace Project No.: 3082431

Sample: MW-51 **Lab ID: 3082431007** Collected: 11/14/12 15:21 Received: 11/21/12 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260							
Benzene	**1650**	ug/L	25.0	25		11/26/12 20:13	71-43-2	
Ethylbenzene	**350**	ug/L	1.0	1		11/26/12 19:48	100-41-4	
Isopropylbenzene (Cumene)	**130**	ug/L	1.0	1		11/26/12 19:48	98-82-8	
Methyl-tert-butyl ether	**1.5**	ug/L	1.0	1		11/26/12 19:48	1634-04-4	
Naphthalene	**99.9**	ug/L	2.0	1		11/26/12 19:48	91-20-3	
Toluene	**352**	ug/L	1.0	1		11/26/12 19:48	108-88-3	
Xylene (Total)	**1100**	ug/L	75.0	25		11/26/12 20:13	1330-20-7	
Surrogates								
Toluene-d8 (S)	97	%	85-115	1		11/26/12 19:48	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-115	1		11/26/12 19:48	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-119	1		11/26/12 19:48	17060-07-0	

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QUALITY CONTROL DATA

Project: Arch St - Qtr
Pace Project No.: 3082431

QC Batch: MSV/14652 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3082431001, 3082431002, 3082431003, 3082431004, 3082431005, 3082431006, 3082431007

METHOD BLANK: 515954 Matrix: Water
Associated Lab Samples: 3082431001, 3082431002, 3082431003, 3082431004, 3082431005, 3082431006, 3082431007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	11/26/12 12:03	
Ethylbenzene	ug/L	ND	1.0	11/26/12 12:03	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	11/26/12 12:03	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/26/12 12:03	
Naphthalene	ug/L	ND	2.0	11/26/12 12:03	
Toluene	ug/L	ND	1.0	11/26/12 12:03	
Xylene (Total)	ug/L	ND	3.0	11/26/12 12:03	
1,2-Dichloroethane-d4 (S)	%	111	77-119	11/26/12 12:03	
4-Bromofluorobenzene (S)	%	101	85-115	11/26/12 12:03	
Toluene-d8 (S)	%	99	85-115	11/26/12 12:03	

LABORATORY CONTROL SAMPLE: 515955

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.0	90	66-122	
Ethylbenzene	ug/L	20	18.8	94	69-119	
Isopropylbenzene (Cumene)	ug/L	20	19.7	98	68-126	
Methyl-tert-butyl ether	ug/L	20	20.8	104	58-131	
Naphthalene	ug/L	20	20.3	102	51-123	
Toluene	ug/L	20	18.4	92	72-115	
Xylene (Total)	ug/L	60	57.9	97	70-123	
1,2-Dichloroethane-d4 (S)	%			112	77-119	
4-Bromofluorobenzene (S)	%			97	85-115	
Toluene-d8 (S)	%			99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 515956 515957

Parameter	Units	3082194002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	17.2	18.5	86	92	66-122	7	
Ethylbenzene	ug/L	ND	20	20	16.8	18.3	84	91	69-119	8	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	18.9	20.1	95	101	68-126	6	
Methyl-tert-butyl ether	ug/L	ND	20	20	19.2	20.0	96	100	58-131	4	
Naphthalene	ug/L	ND	20	20	18.3	20.1	91	100	51-123	9	
Toluene	ug/L	ND	20	20	17.1	18.3	85	91	72-115	7	
Xylene (Total)	ug/L	ND	60	60	52.1	56.1	87	94	70-123	7	
1,2-Dichloroethane-d4 (S)	%						103	104	77-119		
4-Bromofluorobenzene (S)	%						99	103	85-115		
Toluene-d8 (S)	%						97	98	85-115		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Arch St - Qtr
Pace Project No.: 3082431

SAMPLE DUPLICATE: 516024

Parameter	Units	3082194002 Result	Dup Result	RPD	Qualifiers
Benzene	ug/L	ND	ND		
Ethylbenzene	ug/L	ND	ND		
Isopropylbenzene (Cumene)	ug/L	ND	ND		
Methyl-tert-butyl ether	ug/L	ND	ND		
Naphthalene	ug/L	ND	ND		
Toluene	ug/L	ND	ND		
Xylene (Total)	ug/L	ND	ND		
1,2-Dichloroethane-d4 (S)	%	114	119	4	
4-Bromofluorobenzene (S)	%	100	102	2	
Toluene-d8 (S)	%	95	98	3	

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QUALIFIERS

Project: Arch St - Qtr
Pace Project No.: 3082431

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Arch St - Qtr
Pace Project No.: 3082431

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3082431001	MW-1	EPA 8260	MSV/14652		
3082431002	MW-2	EPA 8260	MSV/14652		
3082431003	MW-3	EPA 8260	MSV/14652		
3082431004	MW-4	EPA 8260	MSV/14652		
3082431005	MW-8	EPA 8260	MSV/14652		
3082431006	MW-9	EPA 8260	MSV/14652		
3082431007	MW-51	EPA 8260	MSV/14652		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Insite Group, Inc	Report To:	Sara Giordano	Attention:	Sara Giordano
Address:	611 South Irvine Avene	Copy To:		Company Name:	Same
	Sharon, PA 16146			Address:	Same
Email To:	lab@insitegroup.org	Purchase Order No.:		Pace Quote Reference:	
Phone:	724-347-2101 Fax: 724-347-2139	Project Name:	Arch St - Qtr	Pace Project Manager:	Penny Westrick
Requested Due Date/TAT:		Project Number:	03-07315	Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Kittanning PA

Requested Analysis Filtered (Y/N)

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA 8260 Volatiles (Old PA UST shortlist - unleaded)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			11/14/12	1550		3				X						X		001
2	MW-2	WT	G			11/14/12	1532		3				X						X		002
3	MW-3	WT	G			11/14/12	1457		3				X						X		003
4	MW-4	WT	G			11/14/12	1445		3				X						X		004
5	MW-8	WT	G			11/14/12	1545		3				X						X		005
6	MW-9	WT	G			11/14/12	1510		3				X						X		006
7	MW-51	WT	G			11/14/12	1521		3				X						X		007
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Kristen Kelly	11/29/12	9:30	[signature]	11-21-12	1000	2.1	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: George Mueller

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/14/12

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Friday March 01, 2013

Report Number: L622172
Samples Received: 02/27/13
Client Project: ARCH STREET

Description: Groundwater -QTR

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : February 27, 2013
Description : Groundwater -QTR

Sample ID : MW-1

Collected By : George Mueller
Collection Date : 02/25/13 15:40

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	380	8.3	25.	ug/l		8260B	02/28/13	25
Ethylbenzene	730	9.6	25.	ug/l		8260B	02/28/13	25
Isopropylbenzene	44.	8.2	25.	ug/l		8260B	02/28/13	25
Methyl tert-butyl ether	24.	9.2	25.	ug/l	J	8260B	02/28/13	25
Naphthalene	200	15.	130	ug/l		8260B	02/28/13	25
Toluene	110	20	125.	ug/l	J	8260B	02/28/13	25
Total Xylenes	2200	26.	75.	ug/l		8260B	02/28/13	25
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	02/28/13	25
Dibromofluoromethane	102.			% Rec.		8260B	02/28/13	25
4-Bromofluorobenzene	106.			% Rec.		8260B	02/28/13	25

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-02

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : George Mueller
Collection Date : 02/25/13 15:50

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1400	3.3	10.	ug/l		8260B	02/28/13	10
Ethylbenzene	350	3.8	10.	ug/l		8260B	02/28/13	10
Isopropylbenzene	86.	3.3	10	ug/l		8260B	02/28/13	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	02/28/13	10
Naphthalene	89.	5.9	50.	ug/l		8260B	02/28/13	10
Toluene	550	7.8	50	ug/l		8260B	02/28/13	10
Total Xylenes	1100	11.	30	ug/l		8260B	02/28/13	10
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	02/28/13	10
Dibromofluoromethane	103.			% Rec.		8260B	02/28/13	10
4-Bromofluorobenzene	98.5			% Rec.		8260B	02/28/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-03

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : George Mueller
Collection Date : 02/25/13 15:10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	7.0	0.33	1.0	ug/l		8260B	02/27/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	02/27/13	1
Isopropylbenzene	0.97	0.33	1.	ug/l	J	8260B	02/27/13	1
Methyl tert-butyl ether	3.6	0.37	1.0	ug/l		8260B	02/27/13	1
Naphthalene	U	0.59	5.0	ug/l		8260B	02/27/13	1
Toluene	1.	0.78	5.	ug/l	J	8260B	02/27/13	1
Total Xylenes	U	1.1	3.	ug/l		8260B	02/27/13	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	02/27/13	1
Dibromofluoromethane	103.			% Rec.		8260B	02/27/13	1
4-Bromofluorobenzene	100.			% Rec.		8260B	02/27/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Reported: 03/01/13 15:01 Printed: 03/01/13 15:40

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REPORT OF ANALYSIS

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Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-04

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By :
Collection Date : 02/25/13 14:32

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	02/27/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	02/27/13	1
Isopropylbenzene	U	0.33	1.	ug/l		8260B	02/27/13	1
Methyl tert-butyl ether	0.78	0.37	1.0	ug/l	J	8260B	02/27/13	1
Naphthalene	U	0.59	5.0	ug/l		8260B	02/27/13	1
Toluene	U	0.78	5.	ug/l		8260B	02/27/13	1
Total Xylenes	U	1.1	3.	ug/l		8260B	02/27/13	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	02/27/13	1
Dibromofluoromethane	102.			% Rec.		8260B	02/27/13	1
4-Bromofluorobenzene	105.			% Rec.		8260B	02/27/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-05

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : MW-8

Project # : ARCH STREET

Collected By : George Mueller
Collection Date : 02/25/13 15:19

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	4500	16.	50.	ug/l		8260B	02/27/13	50
Ethylbenzene	2200	19.	50.	ug/l		8260B	02/27/13	50
Isopropylbenzene	94.	16.	50	ug/l		8260B	02/27/13	50
Methyl tert-butyl ether	240	18.	50.	ug/l		8260B	02/27/13	50
Naphthalene	440	29.	250	ug/l		8260B	02/27/13	50
Toluene	900	39.	250	ug/l		8260B	02/27/13	50
Total Xylenes	8900	53.	150	ug/l		8260B	02/27/13	50
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	02/27/13	50
Dibromofluoromethane	102.			% Rec.		8260B	02/27/13	50
4-Bromofluorobenzene	102.			% Rec.		8260B	02/27/13	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-06

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : MW-9

Project # : ARCH STREET

Collected By : George Mueller
Collection Date : 02/25/13 15:31

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1300	8.3	25.	ug/l		8260B	02/27/13	25
Ethylbenzene	1300	9.6	25.	ug/l		8260B	02/27/13	25
Isopropylbenzene	92.	8.2	25.	ug/l		8260B	02/27/13	25
Methyl tert-butyl ether	55.	9.2	25.	ug/l		8260B	02/27/13	25
Naphthalene	250	15.	130	ug/l		8260B	02/27/13	25
Toluene	49.	20	125.	ug/l	J	8260B	02/27/13	25
Total Xylenes	1500	26.	75.	ug/l		8260B	02/27/13	25
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	02/27/13	25
Dibromofluoromethane	101.			% Rec.		8260B	02/27/13	25
4-Bromofluorobenzene	102.			% Rec.		8260B	02/27/13	25

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-07

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH STREET

Collected By : George Mueller
Collection Date : 02/25/13 16:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1300	3.3	10.	ug/l		8260B	02/28/13	10
Ethylbenzene	320	3.8	10.	ug/l		8260B	02/28/13	10
Isopropylbenzene	88.	3.3	10	ug/l		8260B	02/28/13	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	02/28/13	10
Naphthalene	66.	5.9	50.	ug/l		8260B	02/28/13	10
Toluene	490	7.8	50	ug/l		8260B	02/28/13	10
Total Xylenes	960	11.	30	ug/l		8260B	02/28/13	10
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	02/28/13	10
Dibromofluoromethane	102.			% Rec.		8260B	02/28/13	10
4-Bromofluorobenzene	102.			% Rec.		8260B	02/28/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 01, 2013

ESC Sample # : L622172-08

Date Received : February 27, 2013
Description : Groundwater -QTR

Site ID : 03-07315

Sample ID : IP-1

Project # : ARCH STREET

Collected By : George Mueller
Collection Date : 02/25/13 16:08

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	4900	33.	100	ug/l		8260B	02/28/13	100
Ethylbenzene	2100	9.6	25.	ug/l		8260B	02/28/13	25
Isopropylbenzene	84.	8.2	25.	ug/l		8260B	02/28/13	25
Methyl tert-butyl ether	110	9.2	25.	ug/l		8260B	02/28/13	25
Naphthalene	480	15.	130	ug/l		8260B	02/28/13	25
Toluene	3400	20	125.	ug/l		8260B	02/28/13	25
Total Xylenes	8100	26.	75.	ug/l		8260B	02/28/13	25
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	02/28/13	25
Dibromofluoromethane	102.			% Rec.		8260B	02/28/13	25
4-Bromofluorobenzene	103.			% Rec.		8260B	02/28/13	25

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L622172-01	WG638741	SAMP	Methyl tert-butyl ether	R2562397	J
	WG638741	SAMP	Toluene	R2562397	J
L622172-03	WG638743	SAMP	Isopropylbenzene	R2562137	J
	WG638743	SAMP	Toluene	R2562137	J
L622172-04	WG638743	SAMP	Methyl tert-butyl ether	R2562137	J
L622172-06	WG638743	SAMP	Toluene	R2562137	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Groundwater - QTR

City/State Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: George Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): George Mueller

Packed on Ice: N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:

Email? __No ✓Yes

FAX? ✓No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		02/25/13	1540	2	X		L622172-01
MW-2	Grab	GW		02/25/13	1550	2	X		02
MW-3	Grab	GW		02/25/13	1510	2	X		03
MW-4	Grab	GW		02/25/13	1432	2	X		04
MW-8	Grab	GW		02/25/13	1519	2	X		05
MW-9	Grab	GW		02/25/13	1531	2	X		06
MW-51	Grab	GW		02/25/13	1600	2	X		07
IP-1	Grab	GW		02/25/13	1608	2	X		08

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: D1 PRIORITY

5274 8791 3729

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☒ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.7°C / Bottles Received: 16VP	OK (XCS) M
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-27-13 / Time: 0900	pH Checked: / NCF:

Chain of Custody Page 1 of 1

Prepared by: J137

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Monday July 08, 2013

Report Number: L643814
Samples Received: 06/27/13
Client Project: ARCH ST

Description: Groundwater - QTR

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-01

Site ID : 03-07315

Project # : ARCH ST

Date Received : June 27, 2013
Description : Groundwater - QTR

Sample ID : MW-1

Collected By : George Mueller
Collection Date : 06/21/13 14:02

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	180	3.3	10.	ug/l		8260B	06/30/13	10
Ethylbenzene	570	3.8	10.	ug/l		8260B	06/30/13	10
Isopropylbenzene	45.	3.3	10	ug/l		8260B	06/30/13	10
Methyl tert-butyl ether	16.	3.7	10.	ug/l		8260B	06/30/13	10
Naphthalene	170	10.	50.	ug/l		8260B	06/30/13	10
Toluene	74.	7.8	50	ug/l		8260B	06/30/13	10
Total Xylenes	1500	11.	30	ug/l		8260B	06/30/13	10
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	06/30/13	10
Dibromofluoromethane	88.3			% Rec.		8260B	06/30/13	10
4-Bromofluorobenzene	96.9			% Rec.		8260B	06/30/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-02

Site ID : 03-07315

Project # : ARCH ST

Date Received : June 27, 2013
Description : Groundwater - QTR

Sample ID : MW-2

Collected By : George Mueller
Collection Date : 06/21/13 13:52

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1200	3.3	10.	ug/l		8260B	06/30/13	10
Ethylbenzene	290	3.8	10.	ug/l		8260B	06/30/13	10
Isopropylbenzene	98.	3.3	10	ug/l		8260B	06/30/13	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	06/30/13	10
Naphthalene	65.	10.	50.	ug/l		8260B	06/30/13	10
Toluene	290	7.8	50	ug/l		8260B	06/30/13	10
Total Xylenes	860	11.	30	ug/l		8260B	06/30/13	10
Surrogate Recovery								
Toluene-d8	98.6			% Rec.		8260B	06/30/13	10
Dibromofluoromethane	92.7			% Rec.		8260B	06/30/13	10
4-Bromofluorobenzene	100.			% Rec.		8260B	06/30/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-03

Site ID : 03-07315

Project # : ARCH ST

Date Received : June 27, 2013
Description : Groundwater - QTR

Sample ID : MW-3

Collected By : George Mueller
Collection Date : 06/21/13 13:18

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	8.9	0.33	1.0	ug/l		8260B	06/30/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	06/30/13	1
Isopropylbenzene	1.2	0.33	1.	ug/l		8260B	06/30/13	1
Methyl tert-butyl ether	2.8	0.37	1.0	ug/l		8260B	06/30/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	06/30/13	1
Toluene	1.2	0.78	5.	ug/l	J	8260B	06/30/13	1
Total Xylenes	U	1.1	3.	ug/l		8260B	06/30/13	1
Surrogate Recovery								
Toluene-d8	98.4			% Rec.		8260B	06/30/13	1
Dibromofluoromethane	91.2			% Rec.		8260B	06/30/13	1
4-Bromofluorobenzene	99.4			% Rec.		8260B	06/30/13	1

U = ND (Not Detected)
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MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-04

Date Received : June 27, 2013
Description : Groundwater - QTR

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 06/21/13 13:06

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	06/29/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	06/29/13	1
Isopropylbenzene	U	0.33	1.	ug/l		8260B	06/29/13	1
Methyl tert-butyl ether	1.4	0.37	1.0	ug/l		8260B	06/29/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	06/29/13	1
Toluene	U	0.78	5.	ug/l		8260B	06/29/13	1
Total Xylenes	U	1.1	3.	ug/l		8260B	06/29/13	1
Surrogate Recovery								
Toluene-d8	97.2			% Rec.		8260B	06/29/13	1
Dibromofluoromethane	91.1			% Rec.		8260B	06/29/13	1
4-Bromofluorobenzene	99.8			% Rec.		8260B	06/29/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-05

Date Received : June 27, 2013
Description : Groundwater - QTR

Site ID : 03-07315

Sample ID : MW-8

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 06/21/13 13:27

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	2300	16.	50.	ug/l		8260B	06/30/13	50
Ethylbenzene	970	19.	50.	ug/l		8260B	06/30/13	50
Isopropylbenzene	42.	16.	50	ug/l	J	8260B	06/30/13	50
Methyl tert-butyl ether	450	18.	50.	ug/l		8260B	06/30/13	50
Naphthalene	220	50.	250	ug/l	J	8260B	06/30/13	50
Toluene	390	39.	250	ug/l		8260B	06/30/13	50
Total Xylenes	3200	53.	150	ug/l		8260B	06/30/13	50
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	06/30/13	50
Dibromofluoromethane	90.1			% Rec.		8260B	06/30/13	50
4-Bromofluorobenzene	99.1			% Rec.		8260B	06/30/13	50

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-06

Date Received : June 27, 2013
Description : Groundwater - QTR

Site ID : 03-07315

Sample ID : MW-9

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 06/21/13 13:38

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	210	8.3	25.	ug/l		8260B	06/30/13	25
Ethylbenzene	150	9.6	25.	ug/l		8260B	06/30/13	25
Isopropylbenzene	20	8.2	25.	ug/l	J	8260B	06/30/13	25
Methyl tert-butyl ether	89.	9.2	25.	ug/l		8260B	06/30/13	25
Naphthalene	U	25.	130	ug/l		8260B	06/30/13	25
Toluene	U	20	125.	ug/l		8260B	06/30/13	25
Total Xylenes	59.	26.	75.	ug/l	J	8260B	06/30/13	25
Surrogate Recovery								
Toluene-d8	98.1			% Rec.		8260B	06/30/13	25
Dibromofluoromethane	95.3			% Rec.		8260B	06/30/13	25
4-Bromofluorobenzene	102.			% Rec.		8260B	06/30/13	25

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-07

Date Received : June 27, 2013
Description : Groundwater - QTR

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 06/21/13 13:45

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1200	3.3	10.	ug/l		8260B	06/30/13	10
Ethylbenzene	260	3.8	10.	ug/l		8260B	06/30/13	10
Isopropylbenzene	89.	3.3	10	ug/l		8260B	06/30/13	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	06/30/13	10
Naphthalene	53.	10.	50.	ug/l		8260B	06/30/13	10
Toluene	270	7.8	50	ug/l		8260B	06/30/13	10
Total Xylenes	790	11.	30	ug/l		8260B	06/30/13	10
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/30/13	10
Dibromofluoromethane	91.6			% Rec.		8260B	06/30/13	10
4-Bromofluorobenzene	104.			% Rec.		8260B	06/30/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

July 08, 2013

ESC Sample # : L643814-08

Site ID : 03-07315

Project # : ARCH ST

Date Received : June 27, 2013
Description : Groundwater - QTR

Sample ID : IP-1

Collected By : George Mueller
Collection Date : 06/21/13 14:17

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	4700	33.	100	ug/l		8260B	06/30/13	100
Ethylbenzene	2000	38.	100	ug/l		8260B	06/30/13	100
Isopropylbenzene	94.	33.	100	ug/l	J	8260B	06/30/13	100
Methyl tert-butyl ether	89.	37.	100	ug/l	J	8260B	06/30/13	100
Naphthalene	530	100	500	ug/l		8260B	06/30/13	100
Toluene	1200	78.	500	ug/l		8260B	06/30/13	100
Total Xylenes	3800	110	300	ug/l		8260B	06/30/13	100
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	06/30/13	100
Dibromofluoromethane	91.0			% Rec.		8260B	06/30/13	100
4-Bromofluorobenzene	102.			% Rec.		8260B	06/30/13	100

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L643814-03	WG669358	SAMP	Toluene	R2732260	J
L643814-05	WG669358	SAMP	Isopropylbenzene	R2732260	J
	WG669358	SAMP	Naphthalene	R2732260	J
L643814-06	WG669359	SAMP	Isopropylbenzene	R2731062	J
	WG669359	SAMP	Total Xylenes	R2731062	J
L643814-08	WG669359	SAMP	Isopropylbenzene	R2731062	J
	WG669359	SAMP	Methyl tert-butyl ether	R2731062	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122

Phone (615) 758-5858
Phone (800) 767-5859
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K081

Project Description: Groundwater - QTR

City/Sate Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch St

ESC Key: INSITE-GW

Collected by: George Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): George Mueller

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	V8260BTEXMNI / 40mlAmb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		06/21/13	1402	2	X		L643814-01
MW-2	Grab	GW		06/21/13	1352	2	X		-02
MW-3	Grab	GW		06/21/13	1318	2	X		-03
MW-4	Grab	GW		06/21/13	1306	2	X		-04
MW-8	Grab	GW		06/21/13	1327	2	X		-05
MW-9	Grab	GW		06/21/13	1338	2	X		-06
MW-51	Grab	GW		06/21/13	1345	2	X		-07
IP-1	Grab	GW		06/21/13	1417	2	X		-08

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: D1 PRIORITY

5547 0237 4381

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	6/20/13	1315			CCSI
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.0°C / Bottles Received: 16 + TB	OK
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6-27-13 / Time: 0930	pH Checked: / NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday November 07, 2013

Report Number: L666057
Samples Received: 10/31/13
Client Project: ARCH STREET

Description: Groundwater

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : October 31, 2013
Description : Groundwater

Sample ID : MW-8

Collected By : Adam Gaines
Collection Date : 10/25/13 18:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	33.	0.33	1.0	ug/l		8260B	11/04/13	1
Ethylbenzene	21.	0.38	1.0	ug/l		8260B	11/04/13	1
Isopropylbenzene	3.6	0.33	1.0	ug/l		8260B	11/04/13	1
Methyl tert-butyl ether	2.9	0.37	1.0	ug/l		8260B	11/04/13	1
Naphthalene	5.1	1.0	5.0	ug/l		8260B	11/04/13	1
Toluene	3.8	0.78	5.0	ug/l	J	8260B	11/04/13	1
Total Xylenes	160	1.1	3.0	ug/l		8260B	11/04/13	1
Surrogate Recovery								
Toluene-d8	99.4			% Rec.		8260B	11/04/13	1
Dibromofluoromethane	93.1			% Rec.		8260B	11/04/13	1
4-Bromofluorobenzene	106.			% Rec.		8260B	11/04/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-02

Site ID : 03-07315

Project # : ARCH STREET

Date Received : October 31, 2013
Description : Groundwater

Sample ID : MW-10

Collected By : Adam Gaines
Collection Date : 10/25/13 17:50

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	190	0.33	1.0	ug/l		8260B	11/04/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/04/13	1
Isopropylbenzene	4.0	0.33	1.0	ug/l		8260B	11/04/13	1
Methyl tert-butyl ether	3.6	0.37	1.0	ug/l		8260B	11/04/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	11/04/13	1
Toluene	3.7	0.78	5.0	ug/l	J	8260B	11/04/13	1
Total Xylenes	3.5	1.1	3.0	ug/l		8260B	11/04/13	1
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	11/04/13	1
Dibromofluoromethane	94.0			% Rec.		8260B	11/04/13	1
4-Bromofluorobenzene	103.			% Rec.		8260B	11/04/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-03

Site ID : 03-07315

Project # : ARCH STREET

Date Received : October 31, 2013
Description : Groundwater

Sample ID : MW-10D

Collected By : Adam Gaines
Collection Date : 10/25/13 17:38

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	11/04/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/04/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	11/04/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	11/04/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	11/04/13	1
Toluene	U	0.78	5.0	ug/l		8260B	11/04/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	11/04/13	1
Surrogate Recovery								
Toluene-d8	98.3			% Rec.		8260B	11/04/13	1
Dibromofluoromethane	97.2			% Rec.		8260B	11/04/13	1
4-Bromofluorobenzene	99.2			% Rec.		8260B	11/04/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-04

Date Received : October 31, 2013
Description : Groundwater

Site ID : 03-07315

Sample ID : MW-11

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 10/25/13 17:25

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	1.6	5.0	ug/l		8260B	11/05/13	5
Ethylbenzene	21.	1.9	5.0	ug/l		8260B	11/05/13	5
Isopropylbenzene	190	1.6	5.0	ug/l		8260B	11/05/13	5
Methyl tert-butyl ether	U	1.8	5.0	ug/l		8260B	11/05/13	5
Naphthalene	15.	5.0	25.	ug/l	J	8260B	11/05/13	5
Toluene	U	3.9	25.	ug/l		8260B	11/05/13	5
Total Xylenes	14.	5.3	15.	ug/l	J	8260B	11/05/13	5
Surrogate Recovery								
Toluene-d8	98.8			% Rec.		8260B	11/05/13	5
Dibromofluoromethane	101.			% Rec.		8260B	11/05/13	5
4-Bromofluorobenzene	93.7			% Rec.		8260B	11/05/13	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-05

Site ID : 03-07315

Project # : ARCH STREET

Date Received : October 31, 2013
Description : Groundwater

Sample ID : MW-12

Collected By : Adam Gaines
Collection Date : 10/25/13 17:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	52.	0.33	1.0	ug/l		8260B	11/04/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/04/13	1
Isopropylbenzene	6.2	0.33	1.0	ug/l		8260B	11/04/13	1
Methyl tert-butyl ether	5.5	0.37	1.0	ug/l		8260B	11/04/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	11/04/13	1
Toluene	5.5	0.78	5.0	ug/l		8260B	11/04/13	1
Total Xylenes	9.5	1.1	3.0	ug/l		8260B	11/04/13	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	11/04/13	1
Dibromofluoromethane	92.5			% Rec.		8260B	11/04/13	1
4-Bromofluorobenzene	95.6			% Rec.		8260B	11/04/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-06

Site ID : 03-07315

Project # : ARCH STREET

Date Received : October 31, 2013
Description : Groundwater

Sample ID : MW-12D

Collected By : Adam Gaines
Collection Date : 10/25/13 17:07

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.38	0.33	1.0	ug/l	J	8260B	11/04/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/04/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	11/04/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	11/04/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	11/04/13	1
Toluene	U	0.78	5.0	ug/l		8260B	11/04/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	11/04/13	1
Surrogate Recovery								
Toluene-d8	99.7			% Rec.		8260B	11/04/13	1
Dibromofluoromethane	96.9			% Rec.		8260B	11/04/13	1
4-Bromofluorobenzene	95.9			% Rec.		8260B	11/04/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

November 07, 2013

ESC Sample # : L666057-07

Site ID : 03-07315

Project # : ARCH STREET

Date Received : October 31, 2013
Description : Groundwater

Sample ID : MW-51

Collected By : Adam Gaines
Collection Date : 10/25/13 18:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	27.	0.33	1.0	ug/l		8260B	11/04/13	1
Ethylbenzene	17.	0.38	1.0	ug/l		8260B	11/04/13	1
Isopropylbenzene	3.2	0.33	1.0	ug/l		8260B	11/04/13	1
Methyl tert-butyl ether	2.3	0.37	1.0	ug/l		8260B	11/04/13	1
Naphthalene	3.9	1.0	5.0	ug/l	J	8260B	11/04/13	1
Toluene	3.2	0.78	5.0	ug/l	J	8260B	11/04/13	1
Total Xylenes	140	1.1	3.0	ug/l		8260B	11/04/13	1
Surrogate Recovery								
Toluene-d8	98.7			% Rec.		8260B	11/04/13	1
Dibromofluoromethane	91.6			% Rec.		8260B	11/04/13	1
4-Bromofluorobenzene	107.			% Rec.		8260B	11/04/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L666057-01	WG690101	SAMP	Toluene	R2848664	J
L666057-02	WG690101	SAMP	Toluene	R2848664	J
L666057-04	WG690806	SAMP	Naphthalene	R2849725	J
	WG690806	SAMP	Total Xylenes	R2849725	J
L666057-06	WG690101	SAMP	Benzene	R2848664	J
L666057-07	WG690101	SAMP	Naphthalene	R2848664	J
	WG690101	SAMP	Toluene	R2848664	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Chain of Custody
Page 1 of 1

Prepared by

ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
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FAX (615) 758-5859

F037

(lab use only)
CoCode
Template/Prelogin
Shipped Via:

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:
INSITE021113S

Report to: Sara Giordano
Email to: lab@insitegroup.org
Project Description: Groundwater
Phone: 724 347 2101
FAX: 724 347 2139
Collected by: Adam Gaines
Collected by (signature):
Project to be Billed: Kittanning, PA
Client Project #: Arch Street
ESC Key: INSITE021113S
Site/Facility ID#: 03-07315
P.O.#:
Rush? (Lab MUST Be Notified)
Same Day 200%
Next Day 100%
Two Day 50%
Date Results Needed:
Email? No Yes
FAX? No Yes
No. of Cntrs

Analysis/Container/Preservative: 8260BTEXMNI - 40 mL Amb - HCl

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time		
MW-8	Grab	GW		10/25/13	1800	2	X
MW-10	Grab	GW		10/25/13	1750	2	X
MW-10D	Grab	GW		10/25/13	1738	2	X
MW-11	Grab	GW		10/25/13	1725	2	X
MW-12	Grab	GW		10/25/13	1715	2	X
MW-12D	Grab	GW		10/25/13	1707	2	X
MW-31	Grab	GW		10/25/13	1815	2	X

Remarks/Contaminant | Sample # (lab only)
1256027-01
-02
-03
-04
-05
-06
-07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH _____ Temp _____
Flow _____ Other _____

Remarks: P1 Priority Quote# Insite021113S

Samples returned via: UPS FedEx Courier
Condition: (lab use only)
Temp: Bottles Received:
Date: Time:
pH Checked: NCF:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

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Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Monday December 30, 2013

Report Number: L674630
Samples Received: 12/18/13
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-01

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 16:05

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	250	6.6	20.	ug/l		8260B	12/27/13	20
Ethylbenzene	1200	7.7	20.	ug/l		8260B	12/27/13	20
Isopropylbenzene	90.	6.5	20.	ug/l		8260B	12/27/13	20
Methyl tert-butyl ether	U	7.3	20.	ug/l		8260B	12/27/13	20
Naphthalene	390	20.	100	ug/l		8260B	12/27/13	20
Toluene	100	16.	100	ug/l		8260B	12/27/13	20
Total Xylenes	2500	21.	60.	ug/l		8260B	12/27/13	20
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	12/27/13	20
Dibromofluoromethane	96.3			% Rec.		8260B	12/27/13	20
4-Bromofluorobenzene	85.6			% Rec.		8260B	12/27/13	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-02

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:56

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1600	6.6	20.	ug/l		8260B	12/27/13	20
Ethylbenzene	330	7.7	20.	ug/l		8260B	12/27/13	20
Isopropylbenzene	130	6.5	20.	ug/l		8260B	12/27/13	20
Methyl tert-butyl ether	U	7.3	20.	ug/l		8260B	12/27/13	20
Naphthalene	89.	20.	100	ug/l	J	8260B	12/27/13	20
Toluene	310	16.	100	ug/l		8260B	12/27/13	20
Total Xylenes	1000	21.	60.	ug/l		8260B	12/27/13	20
Surrogate Recovery								
Toluene-d8	97.0			% Rec.		8260B	12/27/13	20
Dibromofluoromethane	95.1			% Rec.		8260B	12/27/13	20
4-Bromofluorobenzene	92.0			% Rec.		8260B	12/27/13	20

U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-03

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 16:03

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	5.4	0.33	1.0	ug/l		8260B	12/23/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	0.55	0.33	1.0	ug/l	J	8260B	12/23/13	1
Methyl tert-butyl ether	2.5	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/23/13	1
Toluene	1.4	0.78	5.0	ug/l	J	8260B	12/23/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	99.4			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	94.5			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-04

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:19

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	12/27/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/27/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	12/27/13	1
Methyl tert-butyl ether	0.81	0.37	1.0	ug/l	J	8260B	12/27/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/27/13	1
Toluene	U	0.78	5.0	ug/l		8260B	12/27/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	12/27/13	1
Surrogate Recovery								
Toluene-d8	98.3			% Rec.		8260B	12/27/13	1
Dibromofluoromethane	97.5			% Rec.		8260B	12/27/13	1
4-Bromofluorobenzene	94.6			% Rec.		8260B	12/27/13	1

U = ND (Not Detected)
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REPORT OF ANALYSIS

Ms. Sara Giordano
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December 30, 2013

ESC Sample # : L674630-05

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-8

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:35

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	3900	33.	100	ug/l		8260B	12/27/13	100
Ethylbenzene	1400	3.8	10.	ug/l		8260B	12/23/13	10
Isopropylbenzene	59.	3.3	10.	ug/l		8260B	12/23/13	10
Methyl tert-butyl ether	1200	3.7	10.	ug/l		8260B	12/23/13	10
Naphthalene	240	10.	50.	ug/l		8260B	12/23/13	10
Toluene	430	7.8	50.	ug/l		8260B	12/23/13	10
Total Xylenes	3100	11.	30.	ug/l		8260B	12/23/13	10
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	12/23/13	10
Dibromofluoromethane	97.4			% Rec.		8260B	12/23/13	10
4-Bromofluorobenzene	98.0			% Rec.		8260B	12/23/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-06

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-8D

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:49

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	12/27/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	1.1	1.0	5.0	ug/l	J	8260B	12/23/13	1
Toluene	U	0.78	5.0	ug/l		8260B	12/23/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	97.0			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	99.5			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-07

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-9

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:27

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	50.	0.33	1.0	ug/l		8260B	12/23/13	1
Ethylbenzene	46.	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	10.	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	56.	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	3.9	1.0	5.0	ug/l	J	8260B	12/23/13	1
Toluene	1.9	0.78	5.0	ug/l	J	8260B	12/23/13	1
Total Xylenes	30.	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	102.			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	89.0			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-08

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-10

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:19

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	180	0.33	1.0	ug/l		8260B	12/23/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	2.4	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	2.8	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/23/13	1
Toluene	2.4	0.78	5.0	ug/l	J	8260B	12/23/13	1
Total Xylenes	2.0	1.1	3.0	ug/l	J	8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	102.			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	90.3			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-09

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-10D

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:11

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	0.59	0.33	1.0	ug/l	J	8260B	12/23/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/23/13	1
Toluene	U	0.78	5.0	ug/l		8260B	12/23/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	105.			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	93.9			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-10

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-11

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:06

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	3.3	10.	ug/l		8260B	12/27/13	10
Ethylbenzene	29.	3.8	10.	ug/l		8260B	12/27/13	10
Isopropylbenzene	160	3.3	10.	ug/l		8260B	12/27/13	10
Methyl tert-butyl ether	U	3.7	10.	ug/l		8260B	12/27/13	10
Naphthalene	19.	10.	50.	ug/l	J	8260B	12/27/13	10
Toluene	U	7.8	50.	ug/l		8260B	12/27/13	10
Total Xylenes	17.	11.	30.	ug/l	J	8260B	12/27/13	10
Surrogate Recovery								
Toluene-d8	98.0			% Rec.		8260B	12/27/13	10
Dibromofluoromethane	96.9			% Rec.		8260B	12/27/13	10
4-Bromofluorobenzene	90.7			% Rec.		8260B	12/27/13	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-11

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-12

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:36

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	79.	0.33	1.0	ug/l		8260B	12/23/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	6.6	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	5.3	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/23/13	1
Toluene	6.3	0.78	5.0	ug/l		8260B	12/23/13	1
Total Xylenes	9.4	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	102.			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	81.6			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
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December 30, 2013

ESC Sample # : L674630-12

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-12D

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:49

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	12/23/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/23/13	1
Toluene	U	0.78	5.0	ug/l		8260B	12/23/13	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	104.			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	92.1			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

December 30, 2013

ESC Sample # : L674630-13

Date Received : December 18, 2013
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH STREET

Collected By : Ganies and Mueller
Collection Date : 12/16/13 15:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	77.	0.33	1.0	ug/l		8260B	12/23/13	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	12/23/13	1
Isopropylbenzene	6.5	0.33	1.0	ug/l		8260B	12/23/13	1
Methyl tert-butyl ether	5.7	0.37	1.0	ug/l		8260B	12/23/13	1
Naphthalene	U	1.0	5.0	ug/l		8260B	12/23/13	1
Toluene	5.9	0.78	5.0	ug/l		8260B	12/23/13	1
Total Xylenes	8.6	1.1	3.0	ug/l		8260B	12/23/13	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	12/23/13	1
Dibromofluoromethane	102.			% Rec.		8260B	12/23/13	1
4-Bromofluorobenzene	82.3			% Rec.		8260B	12/23/13	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L674630-02	WG699369	SAMP	Naphthalene	R2872194	J
L674630-03	WG698088	SAMP	Isopropylbenzene	R2871959	J
	WG698088	SAMP	Toluene	R2871959	J
L674630-04	WG699369	SAMP	Methyl tert-butyl ether	R2872194	J
L674630-06	WG698088	SAMP	Naphthalene	R2871959	J
L674630-07	WG698088	SAMP	Naphthalene	R2871959	J
	WG698088	SAMP	Toluene	R2871959	J
L674630-08	WG698088	SAMP	Toluene	R2871959	J
	WG698088	SAMP	Total Xylenes	R2871959	J
L674630-09	WG698088	SAMP	Benzene	R2871959	J
L674630-10	WG699369	SAMP	Naphthalene	R2872194	J
	WG699369	SAMP	Total Xylenes	R2872194	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page 1 of 2

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
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H183

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring

Any Site Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Gaines and Mueller

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature): [signature]

Packed on Ice: N Y

Rush? (Lab MUST Be Notified)
___ Same Day.. 200%
___ Next Day..... 100%
___ Two Day..... 50%

Date Results Needed:
Email? No ✓ Yes
FAX? ✓ No __ Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No of Cntrs	v8260 BTEXMNI / 40 mL Amb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		12/16/13	1605	2	X		[illegible]
MW-2	Grab	GW		12/16/13	1556	2	X		[illegible]
MW-3	Grab	GW		12/16/13	1603	2	X		[illegible]
MW-4	Grab	GW		12/16/13	1519	2	X		[illegible]
MW-8	Grab	GW		12/16/13	1535	2	X		[illegible]
MW-8D	Grab	GW		12/16/13	1549	2	X		[illegible]
MW-9	Grab	GW		12/16/13	1527	2	X		[illegible]
MW-10	Grab	GW		12/16/13	1519	2	X		[illegible]
MW-10D	Grab	GW		12/16/13	1511	2	X		[illegible]

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH ___ Temp ___
Flow ___ Other ___

Remarks: [illegible]

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	12/17/13	1500	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐

Condition: (lab use only)

Temp:	Bottles Received:	
[illegible]	26	[illegible]
Date: 12-18-13	Time: [illegible]	pH Checked: NCF:

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page 2 of 2

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Report to: Sara Giordano
Email to: lab@insitegroup.org
Project Description: Quarterly Groundwater Monitoring
State Collected: Kittanning, PA
Phone: 724 347 2107
FAX: 724 347 2139
Client Project #: Arch Street
ESC Key: INSITE-GW
Collected by: Gaines and Mueller
Site/Facility ID#: 03-07315 P.O.#
Collected by (signature):
Packed on Ice: N Y

Rush? (Lab MUST Be Notified)
___ Same Day..... 200%
___ Next Day..... 100%
___ Two Day..... 50%

Date Results Needed:
Email? No Yes
FAX? Yes No

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI / 40 mL Amb / HCl	Remarks/Contaminant	Sample # (lab only)
MW-11	Grab	GW		12/16/13	1506	2	X		
MW-12	Grab	GW		12/16/13	1536	2	X		
MW-12D	Grab	GW		12/16/13	1549	2	X		
MW-51	Grab	GW		12/16/13	1530	2	X		

*Matrix: SS - Soil/Solid GW - Groundwater WW - Wastewater DW - Drinking Water OT - Other

pH _____ Temp _____
Flow _____ Other _____

Remarks: 01 Priority

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	12/17/13	1500	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: FedEx Courier UPS
Temp: 3.1
Bottles Received: 24
Condition: (lab use only)
Date: 12/17/13
Time: 1500
pH Checked
NCF

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Thursday April 10, 2014

Report Number: L691657
Samples Received: 04/03/14
Client Project: ARCH STREET

Description: Quarterly Groundwater Monitoring

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-01

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-1

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 15:13

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	270	3.3	10.	ug/l		8260B	04/09/14	10
Ethylbenzene	1000	3.8	10.	ug/l		8260B	04/09/14	10
Isopropylbenzene	70.	3.3	10.	ug/l		8260B	04/09/14	10
Methyl tert-butyl ether	15.	3.7	10.	ug/l	J3	8260B	04/09/14	10
Naphthalene	390	10.	50.	ug/l		8260B	04/09/14	10
Toluene	140	7.8	50.	ug/l		8260B	04/09/14	10
Total Xylenes	3000	11.	30.	ug/l		8260B	04/09/14	10
Surrogate Recovery								
Toluene-d8	97.0			% Rec.		8260B	04/09/14	10
Dibromofluoromethane	91.8			% Rec.		8260B	04/09/14	10
4-Bromofluorobenzene	89.6			% Rec.		8260B	04/09/14	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-02

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-2

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:55

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1500	6.6	20.	ug/l		8260B	04/08/14	20
Ethylbenzene	330	7.7	20.	ug/l		8260B	04/08/14	20
Isopropylbenzene	140	6.5	20.	ug/l		8260B	04/08/14	20
Methyl tert-butyl ether	U	7.3	20.	ug/l		8260B	04/08/14	20
Naphthalene	89.	20.	100	ug/l	J	8260B	04/08/14	20
Toluene	540	16.	100	ug/l		8260B	04/08/14	20
Total Xylenes	920	21.	60.	ug/l		8260B	04/08/14	20
Surrogate Recovery								
Toluene-d8	160.			% Rec.	J1	8260B	04/08/14	20
Dibromofluoromethane	91.3			% Rec.		8260B	04/08/14	20
4-Bromofluorobenzene	95.6			% Rec.		8260B	04/08/14	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-03

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-3

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:50

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	6.2	0.33	1.0	ug/l		8260B	04/08/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/08/14	1
Isopropylbenzene	0.84	0.33	1.0	ug/l	J	8260B	04/08/14	1
Methyl tert-butyl ether	2.6	0.37	1.0	ug/l		8260B	04/08/14	1
Naphthalene	U	1.0	5.0	ug/l		8260B	04/08/14	1
Toluene	0.90	0.78	5.0	ug/l	J	8260B	04/08/14	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	04/08/14	1
Surrogate Recovery								
Toluene-d8	96.3			% Rec.		8260B	04/08/14	1
Dibromofluoromethane	97.6			% Rec.		8260B	04/08/14	1
4-Bromofluorobenzene	86.5			% Rec.		8260B	04/08/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-04

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-4

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:24

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	04/08/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/08/14	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	04/08/14	1
Methyl tert-butyl ether	1.1	0.37	1.0	ug/l		8260B	04/08/14	1
Naphthalene	U	1.0	5.0	ug/l		8260B	04/08/14	1
Toluene	U	0.78	5.0	ug/l		8260B	04/08/14	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	04/08/14	1
Surrogate Recovery								
Toluene-d8	95.7			% Rec.		8260B	04/08/14	1
Dibromofluoromethane	96.5			% Rec.		8260B	04/08/14	1
4-Bromofluorobenzene	91.1			% Rec.		8260B	04/08/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-05

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-8

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 15:55

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	4000	33.	100	ug/l		8260B	04/09/14	100
Ethylbenzene	2500	38.	100	ug/l		8260B	04/09/14	100
Isopropylbenzene	97.	3.3	10.	ug/l		8260B	04/08/14	10
Methyl tert-butyl ether	190	3.7	10.	ug/l		8260B	04/08/14	10
Naphthalene	730	10.	50.	ug/l		8260B	04/08/14	10
Toluene	920	7.8	50.	ug/l		8260B	04/08/14	10
Total Xylenes	11000	110	300	ug/l		8260B	04/09/14	100
Surrogate Recovery								
Toluene-d8	98.5			% Rec.		8260B	04/08/14	10
Dibromofluoromethane	92.9			% Rec.		8260B	04/08/14	10
4-Bromofluorobenzene	91.1			% Rec.		8260B	04/08/14	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-06

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-8D

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:59

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	04/10/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/10/14	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	04/10/14	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	04/10/14	1
Naphthalene	U	1.0	5.0	ug/l		8260B	04/10/14	1
Toluene	U	0.78	5.0	ug/l		8260B	04/10/14	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	04/10/14	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	04/10/14	1
Dibromofluoromethane	106.			% Rec.		8260B	04/10/14	1
4-Bromofluorobenzene	104.			% Rec.		8260B	04/10/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-07

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-9

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 15:05

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	350	3.3	10.	ug/l		8260B	04/09/14	10
Ethylbenzene	340	3.8	10.	ug/l		8260B	04/09/14	10
Isopropylbenzene	26.	0.33	1.0	ug/l		8260B	04/09/14	1
Methyl tert-butyl ether	38.	0.37	1.0	ug/l		8260B	04/09/14	1
Naphthalene	66.	1.0	5.0	ug/l		8260B	04/09/14	1
Toluene	8.3	0.78	5.0	ug/l		8260B	04/09/14	1
Total Xylenes	160	1.1	3.0	ug/l		8260B	04/09/14	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	04/09/14	1
Dibromofluoromethane	117.			% Rec.		8260B	04/09/14	1
4-Bromofluorobenzene	86.8			% Rec.		8260B	04/09/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-08

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-10

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:45

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	160	0.33	1.0	ug/l		8260B	04/09/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/09/14	1
Isopropylbenzene	3.0	0.33	1.0	ug/l		8260B	04/09/14	1
Methyl tert-butyl ether	3.4	0.37	1.0	ug/l		8260B	04/09/14	1
Naphthalene	1.5	1.0	5.0	ug/l	J	8260B	04/09/14	1
Toluene	1.7	0.78	5.0	ug/l	J	8260B	04/09/14	1
Total Xylenes	1.4	1.1	3.0	ug/l	J	8260B	04/09/14	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	04/09/14	1
Dibromofluoromethane	118.			% Rec.		8260B	04/09/14	1
4-Bromofluorobenzene	97.9			% Rec.		8260B	04/09/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-09

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-10D

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:35

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	04/09/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/09/14	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	04/09/14	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	04/09/14	1
Naphthalene	U	1.0	5.0	ug/l		8260B	04/09/14	1
Toluene	U	0.78	5.0	ug/l		8260B	04/09/14	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	04/09/14	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	04/09/14	1
Dibromofluoromethane	118.			% Rec.		8260B	04/09/14	1
4-Bromofluorobenzene	99.3			% Rec.		8260B	04/09/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-10

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-11

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:25

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	04/09/14	1
Ethylbenzene	3.6	0.38	1.0	ug/l		8260B	04/09/14	1
Isopropylbenzene	57.	0.33	1.0	ug/l		8260B	04/09/14	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	04/09/14	1
Naphthalene	5.4	1.0	5.0	ug/l		8260B	04/09/14	1
Toluene	U	0.78	5.0	ug/l		8260B	04/09/14	1
Total Xylenes	2.7	1.1	3.0	ug/l	J	8260B	04/09/14	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	04/09/14	1
Dibromofluoromethane	118.			% Rec.		8260B	04/09/14	1
4-Bromofluorobenzene	97.7			% Rec.		8260B	04/09/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-11

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-12

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:39

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	36.	0.33	1.0	ug/l		8260B	04/09/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/09/14	1
Isopropylbenzene	3.8	0.33	1.0	ug/l		8260B	04/09/14	1
Methyl tert-butyl ether	4.3	0.37	1.0	ug/l		8260B	04/09/14	1
Naphthalene	U	1.0	5.0	ug/l		8260B	04/09/14	1
Toluene	2.3	0.78	5.0	ug/l	J	8260B	04/09/14	1
Total Xylenes	2.4	1.1	3.0	ug/l	J	8260B	04/09/14	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	04/09/14	1
Dibromofluoromethane	117.			% Rec.		8260B	04/09/14	1
4-Bromofluorobenzene	88.3			% Rec.		8260B	04/09/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-12

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-12D

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 14:31

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	U	0.33	1.0	ug/l		8260B	04/10/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	04/10/14	1
Isopropylbenzene	U	0.33	1.0	ug/l		8260B	04/10/14	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	04/10/14	1
Naphthalene	U	1.0	5.0	ug/l		8260B	04/10/14	1
Toluene	U	0.78	5.0	ug/l		8260B	04/10/14	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	04/10/14	1
Surrogate Recovery								
Toluene-d8	95.5			% Rec.		8260B	04/10/14	1
Dibromofluoromethane	99.0			% Rec.		8260B	04/10/14	1
4-Bromofluorobenzene	91.7			% Rec.		8260B	04/10/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

April 10, 2014

ESC Sample # : L691657-13

Date Received : April 03, 2014
Description : Quarterly Groundwater Monitoring

Site ID : 03-07315

Sample ID : MW-51

Project # : ARCH STREET

Collected By : Gaines / Mueller
Collection Date : 03/27/14 16:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	3100	6.6	20.	ug/l		8260B	04/10/14	20
Ethylbenzene	1900	7.7	20.	ug/l		8260B	04/10/14	20
Isopropylbenzene	81.	6.5	20.	ug/l		8260B	04/10/14	20
Methyl tert-butyl ether	180	7.3	20.	ug/l		8260B	04/10/14	20
Naphthalene	680	20.	100	ug/l		8260B	04/10/14	20
Toluene	800	16.	100	ug/l		8260B	04/10/14	20
Total Xylenes	8600	21.	60.	ug/l		8260B	04/10/14	20
Surrogate Recovery								
Toluene-d8	98.1			% Rec.		8260B	04/10/14	20
Dibromofluoromethane	93.5			% Rec.		8260B	04/10/14	20
4-Bromofluorobenzene	92.5			% Rec.		8260B	04/10/14	20

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L691657-01	WG715340	SAMP	Methyl tert-butyl ether	R2903444	J3
L691657-02	WG714540	SAMP	Naphthalene	R2902900	J
	WG714540	SAMP	Toluene-d8	R2902900	J1
L691657-03	WG714540	SAMP	Isopropylbenzene	R2902900	J
	WG714540	SAMP	Toluene	R2902900	J
L691657-08	WG715195	SAMP	Naphthalene	R2903026	J
	WG715195	SAMP	Toluene	R2903026	J
	WG715195	SAMP	Total Xylenes	R2903026	J
L691657-10	WG715195	SAMP	Total Xylenes	R2903026	J
L691657-11	WG715195	SAMP	Toluene	R2903026	J
	WG715195	SAMP	Total Xylenes	R2903026	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information: INSITE022114S

Analysis/Container/Preservative

Chain of Custody Page 1 of 2

H059

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Report to: Sara Giordano
Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring
Key Site Collected: Kittanning, PA
Phone: 724 347 2101
FAX: 724 347 2139
Client Project #: Arch Street
ESC Key: INSITF022114S
Collected by: Gaines and Mueller
Site/Facility ID#: 03-07315
P.O.#:
Collected by (signature): [signature]
Packed on Ice: N Y

Rush? (Lab MUST Be Notified)
Same Day 200%
Next Day 100%
Two Day 50%

Date Results Needed:
Email? No ✓ Yes
FAX? ✓ No Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		03/27/14	1513	2	X		L691657-01
MW-2	Grab	GW		03/27/14	1455	2	X		-02
MW-3	Grab	GW		03/27/14	1450	2	X		-03
MW-4	Grab	GW		03/27/14	1424	2	X		-04
MW-8	Grab	GW		03/27/14	1555	2	X		-05
MW-8D	Grab	GW		03/27/14	1459	2	X		-06
MW-9	Grab	GW		03/27/14	1505	2	X		-07
MW-10	Grab	GW		03/27/14	1445	2	X		-08
MW-10D	Grab	GW		03/27/14	1435	2	X		-09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH Temp
Remarks: D1 Priority Quote # INSITE022114S 5851 4710 4263 Flow Other

Relinquished by: (Signature) [signature] Date: 4/2/14 Time: 1000 Received by: (Signature)
Samples returned via: ☐ UPS ☑ FedEx ☐ Courier
Condition: (lab use only) OK

Relinquished by: (Signature) Date: Time: Received by: (Signature)
Temp: 3.1 Bottles Received: 26 = VP

Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) [signature]
Date: 4-3-14 Time: 0930 pH Checked: NCF:

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information: INSITE022114S

Analysis/Container/Preservative

Chain of Custody Page 2 of 2

Prepared by

ENVIRONMENTAL SCIENCE CORP.
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Report to: Sara Giordano
Email to: lab@insitegroup.org

Project Description: Quarterly Groundwater Monitoring
City/State Collected: Kittanning, PA
Phone: 724 347 2101
FAX: 724 347 2139
Client Project #: Arch Street
ESC Key: INSITE022114S
Collected by: Gaines and Mueller
Site/Facility ID#: 03-07315
P.O.#:
Collected by (signature): [signature]
Packed on Ice: N Y X

Rush? (Lab MUST Be Notified)
Same Day... 200%
Next Day... 100%
Two Day... 50%

Date Results Needed:
Email? No ✓ Yes
FAX? ✓ No Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs.	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
MW-11	Grab	GW		03/27/14	1425	2	X		L691657-10
MW-12	Grab	GW		03/27/14	1439	2	X		-11
MW-12D	Grab	GW		03/27/14	1431	2	X		-12
MW-51	Grab	GW		03/27/14	1600	2	X		-13

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH Temp
Flow Other

Remarks: D1 Priority Quote # INSITE022114S

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	4/4/14	1500			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1 / Bottles Received: 26=VP	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 4-3-14 / Time: 0930	pH Checked: / NCF:

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(724)850-5600

June 23, 2014

Ms. Sara Giordano
Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

RE: Project: Arch-QTR
Pace Project No.: 30122550

Dear Ms. Giordano:
Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Samantha Bayura

Samantha Bayura
samantha.bayura@pacelabs.com
Project Manager

Enclosures

cc: Insite Group, Insite Group, Inc.

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CERTIFICATIONS

Project: Arch-QTR
Pace Project No.: 30122550

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE ANALYTE COUNT

Project: Arch-QTR
Pace Project No.: 30122550

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30122550001	MW-1	EPA 8260B	DJL	10	PASI-PA
30122550002	MW-2	EPA 8260B	DJL	10	PASI-PA
30122550003	MW-3	EPA 8260B	DJL	10	PASI-PA
30122550004	MW-4	EPA 8260B	DJL	10	PASI-PA
30122550005	MW-8	EPA 8260B	DJL	10	PASI-PA
30122550006	MW-8D	EPA 8260B	DJL	10	PASI-PA
30122550007	MW-9	EPA 8260B	DJL	10	PASI-PA
30122550008	MW-10	EPA 8260B	DJL	10	PASI-PA
30122550009	MW-10D	EPA 8260B	DJL	10	PASI-PA
30122550010	MW-11	EPA 8260B	DJL	10	PASI-PA
30122550011	MW-12	EPA 8260B	DJL	10	PASI-PA
30122550012	MW-12D	EPA 8260B	JAS	10	PASI-PA
30122550013	MW-51	EPA 8260B	JAS	10	PASI-PA

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-1 **Lab ID: 30122550001** Collected: 06/10/14 15:11 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**373**	ug/L	50.0	50		06/16/14 21:00	71-43-2	
Ethylbenzene	**1550**	ug/L	50.0	50		06/16/14 21:00	100-41-4	
Isopropylbenzene (Cumene)	**214**	ug/L	50.0	50		06/16/14 21:00	98-82-8	
Methyl-tert-butyl ether	**9.5**	ug/L	1.0	1		06/16/14 20:35	1634-04-4	
Naphthalene	**1210**	ug/L	100	50		06/16/14 21:00	91-20-3	
Toluene	**455**	ug/L	50.0	50		06/16/14 21:00	108-88-3	
Xylene (Total)	**4130**	ug/L	150	50		06/16/14 21:00	1330-20-7	
Surrogates								
Toluene-d8 (S)	90	%	85-115	1		06/16/14 20:35	2037-26-5	
4-Bromofluorobenzene (S)	129	%	85-115	1		06/16/14 20:35	460-00-4	S2
1,2-Dichloroethane-d4 (S)	100	%	77-119	1		06/16/14 20:35	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-2 **Lab ID: 30122550002** Collected: 06/10/14 15:18 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**857**	ug/L	25.0	25		06/16/14 13:06	71-43-2	
Ethylbenzene	**195**	ug/L	25.0	25		06/16/14 13:06	100-41-4	
Isopropylbenzene (Cumene)	**68.9**	ug/L	25.0	25		06/16/14 13:06	98-82-8	
Methyl-tert-butyl ether	**2.0**	ug/L	1.0	1		06/16/14 11:51	1634-04-4	
Naphthalene	**67.2**	ug/L	50.0	25		06/16/14 13:06	91-20-3	
Toluene	**208**	ug/L	25.0	25		06/16/14 13:06	108-88-3	
Xylene (Total)	**544**	ug/L	75.0	25		06/16/14 13:06	1330-20-7	
Surrogates								
Toluene-d8 (S)	102	%	85-115	1		06/16/14 11:51	2037-26-5	
4-Bromofluorobenzene (S)	125	%	85-115	1		06/16/14 11:51	460-00-4	S2
1,2-Dichloroethane-d4 (S)	98	%	77-119	1		06/16/14 11:51	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-3 **Lab ID: 30122550003** Collected: 06/10/14 14:45 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**13.0**	ug/L	1.0	1		06/16/14 17:15	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/16/14 17:15	100-41-4	
Isopropylbenzene (Cumene)	**2.4**	ug/L	1.0	1		06/16/14 17:15	98-82-8	
Methyl-tert-butyl ether	**2.2**	ug/L	1.0	1		06/16/14 17:15	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/16/14 17:15	91-20-3	
Toluene	**1.9**	ug/L	1.0	1		06/16/14 17:15	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/16/14 17:15	1330-20-7	
Surrogates								
Toluene-d8 (S)	91	%	85-115	1		06/16/14 17:15	2037-26-5	
4-Bromofluorobenzene (S)	102	%	85-115	1		06/16/14 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	77-119	1		06/16/14 17:15	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-4 **Lab ID: 30122550004** Collected: 06/10/14 14:18 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		06/16/14 17:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/16/14 17:40	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/16/14 17:40	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/16/14 17:40	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/16/14 17:40	91-20-3	
Toluene	ND	ug/L	1.0	1		06/16/14 17:40	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/16/14 17:40	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	85-115	1		06/16/14 17:40	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-115	1		06/16/14 17:40	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	77-119	1		06/16/14 17:40	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-8 **Lab ID: 30122550005** Collected: 06/10/14 14:55 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**2370**	ug/L	50.0	50		06/16/14 14:45	71-43-2	
Ethylbenzene	**1570**	ug/L	50.0	50		06/16/14 14:45	100-41-4	
Isopropylbenzene (Cumene)	**83.5**	ug/L	50.0	50		06/16/14 14:45	98-82-8	
Methyl-tert-butyl ether	**211**	ug/L	50.0	50		06/16/14 14:45	1634-04-4	
Naphthalene	**573**	ug/L	100	50		06/16/14 14:45	91-20-3	
Toluene	**479**	ug/L	50.0	50		06/16/14 14:45	108-88-3	
Xylene (Total)	**5230**	ug/L	150	50		06/16/14 14:45	1330-20-7	
Surrogates								
Toluene-d8 (S)	103	%	85-115	50		06/16/14 14:45	2037-26-5	
4-Bromofluorobenzene (S)	99	%	85-115	50		06/16/14 14:45	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	77-119	50		06/16/14 14:45	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-8D **Lab ID: 30122550006** Collected: 06/10/14 15:04 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		06/16/14 18:05	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/16/14 18:05	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/16/14 18:05	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/16/14 18:05	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/16/14 18:05	91-20-3	
Toluene	ND	ug/L	1.0	1		06/16/14 18:05	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/16/14 18:05	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	85-115	1		06/16/14 18:05	2037-26-5	
4-Bromofluorobenzene (S)	100	%	85-115	1		06/16/14 18:05	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	77-119	1		06/16/14 18:05	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-9 **Lab ID: 30122550007** Collected: 06/10/14 15:10 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**1330**	ug/L	50.0	50		06/17/14 22:35	71-43-2	
Ethylbenzene	**1310**	ug/L	50.0	50		06/17/14 22:35	100-41-4	
Isopropylbenzene (Cumene)	**85.1**	ug/L	50.0	50		06/17/14 22:35	98-82-8	
Methyl-tert-butyl ether	**20.3**	ug/L	1.0	1		06/16/14 18:30	1634-04-4	
Naphthalene	**425**	ug/L	100	50		06/17/14 22:35	91-20-3	
Toluene	**55.1**	ug/L	50.0	50		06/17/14 22:35	108-88-3	
Xylene (Total)	**1320**	ug/L	150	50		06/17/14 22:35	1330-20-7	
Surrogates								
Toluene-d8 (S)	137	%	85-115	1		06/16/14 18:30	2037-26-5	S2
4-Bromofluorobenzene (S)	187	%	85-115	1		06/16/14 18:30	460-00-4	S2
1,2-Dichloroethane-d4 (S)	100	%	77-119	1		06/16/14 18:30	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-10 **Lab ID: 30122550008** Collected: 06/10/14 15:01 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**87.5**	ug/L	10.0	10		06/17/14 22:10	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/16/14 20:10	100-41-4	
Isopropylbenzene (Cumene)	**6.6**	ug/L	1.0	1		06/16/14 20:10	98-82-8	
Methyl-tert-butyl ether	**4.4**	ug/L	1.0	1		06/16/14 20:10	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/16/14 20:10	91-20-3	
Toluene	**1.4**	ug/L	1.0	1		06/16/14 20:10	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/16/14 20:10	1330-20-7	
Surrogates								
Toluene-d8 (S)	94	%	85-115	1		06/16/14 20:10	2037-26-5	
4-Bromofluorobenzene (S)	99	%	85-115	1		06/16/14 20:10	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	77-119	1		06/16/14 20:10	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-10D **Lab ID: 30122550009** Collected: 06/10/14 14:52 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		06/16/14 18:55	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/16/14 18:55	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/16/14 18:55	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/16/14 18:55	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/17/14 21:20	91-20-3	
Toluene	ND	ug/L	1.0	1		06/16/14 18:55	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/16/14 18:55	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	85-115	1		06/16/14 18:55	2037-26-5	
4-Bromofluorobenzene (S)	96	%	85-115	1		06/16/14 18:55	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	77-119	1		06/16/14 18:55	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-11 **Lab ID: 30122550010** Collected: 06/10/14 14:35 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		06/16/14 19:20	71-43-2	
Ethylbenzene	**5.5**	ug/L	1.0	1		06/16/14 19:20	100-41-4	
Isopropylbenzene (Cumene)	**49.6**	ug/L	1.0	1		06/16/14 19:20	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/16/14 19:20	1634-04-4	
Naphthalene	**3.0**	ug/L	2.0	1		06/17/14 21:45	91-20-3	
Toluene	ND	ug/L	1.0	1		06/16/14 19:20	108-88-3	
Xylene (Total)	**4.6**	ug/L	3.0	1		06/16/14 19:20	1330-20-7	
Surrogates								
Toluene-d8 (S)	99	%	85-115	1		06/16/14 19:20	2037-26-5	
4-Bromofluorobenzene (S)	103	%	85-115	1		06/16/14 19:20	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	77-119	1		06/16/14 19:20	17060-07-0	

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ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-12 **Lab ID: 30122550011** Collected: 06/10/14 14:26 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**21.8**	ug/L	1.0	1		06/16/14 19:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/16/14 19:45	100-41-4	
Isopropylbenzene (Cumene)	**4.8**	ug/L	1.0	1		06/16/14 19:45	98-82-8	
Methyl-tert-butyl ether	**3.2**	ug/L	1.0	1		06/16/14 19:45	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/16/14 19:45	91-20-3	
Toluene	**1.2**	ug/L	1.0	1		06/16/14 19:45	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/16/14 19:45	1330-20-7	
Surrogates								
Toluene-d8 (S)	88	%	85-115	1		06/16/14 19:45	2037-26-5	
4-Bromofluorobenzene (S)	102	%	85-115	1		06/16/14 19:45	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	77-119	1		06/16/14 19:45	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-12D **Lab ID: 30122550012** Collected: 06/10/14 14:37 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		06/18/14 02:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/18/14 02:56	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/18/14 02:56	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/18/14 02:56	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/18/14 02:56	91-20-3	
Toluene	ND	ug/L	1.0	1		06/18/14 02:56	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/18/14 02:56	1330-20-7	
Surrogates								
Toluene-d8 (S)	103	%	85-115	1		06/18/14 02:56	2037-26-5	
4-Bromofluorobenzene (S)	98	%	85-115	1		06/18/14 02:56	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-119	1		06/18/14 02:56	17060-07-0	

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Arch-QTR
Pace Project No.: 30122550

Sample: MW-51 **Lab ID: 30122550013** Collected: 06/10/14 15:00 Received: 06/12/14 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260B							
Benzene	**2320**	ug/L	20.0	20		06/18/14 07:24	71-43-2	
Ethylbenzene	**1680**	ug/L	20.0	20		06/18/14 07:24	100-41-4	
Isopropylbenzene (Cumene)	**71.2**	ug/L	1.0	1		06/18/14 07:00	98-82-8	
Methyl-tert-butyl ether	**215**	ug/L	1.0	1		06/18/14 07:00	1634-04-4	
Naphthalene	**1780**	ug/L	40.0	20		06/18/14 07:24	91-20-3	
Toluene	**480**	ug/L	20.0	20		06/18/14 07:24	108-88-3	
Xylene (Total)	**5880**	ug/L	60.0	20		06/18/14 07:24	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	85-115	1		06/18/14 07:00	2037-26-5	
4-Bromofluorobenzene (S)	103	%	85-115	1		06/18/14 07:00	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-119	1		06/18/14 07:00	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: Arch-QTR
Pace Project No.: 30122550

QC Batch: MSV/19949 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 30122550001, 30122550002, 30122550003, 30122550004, 30122550005, 30122550006, 30122550007, 30122550008, 30122550009, 30122550010, 30122550011

METHOD BLANK: 743682 Matrix: Water
Associated Lab Samples: 30122550001, 30122550002, 30122550003, 30122550004, 30122550005, 30122550006, 30122550007, 30122550008, 30122550009, 30122550010, 30122550011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/16/14 11:01	
Ethylbenzene	ug/L	ND	1.0	06/16/14 11:01	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/16/14 11:01	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/16/14 11:01	
Naphthalene	ug/L	ND	2.0	06/16/14 11:01	
Toluene	ug/L	ND	1.0	06/16/14 11:01	
Xylene (Total)	ug/L	ND	3.0	06/16/14 11:01	
1,2-Dichloroethane-d4 (S)	%	92	77-119	06/16/14 11:01	
4-Bromofluorobenzene (S)	%	99	85-115	06/16/14 11:01	
Toluene-d8 (S)	%	101	85-115	06/16/14 11:01	

LABORATORY CONTROL SAMPLE: 743683

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.4	97	66-122	
Ethylbenzene	ug/L	20	19.1	96	69-119	
Isopropylbenzene (Cumene)	ug/L	20	22.2	111	68-126	
Methyl-tert-butyl ether	ug/L	20	18.0	90	58-131	
Naphthalene	ug/L	20	21.0	105	51-123	
Toluene	ug/L	20	19.6	98	72-115	
Xylene (Total)	ug/L	60	55.9	93	70-123	
1,2-Dichloroethane-d4 (S)	%			92	77-119	
4-Bromofluorobenzene (S)	%			101	85-115	
Toluene-d8 (S)	%			101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 743684 743685

Parameter	Units	30122349003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	20.8	20.7	104	104	66-122	0	
Ethylbenzene	ug/L	ND	20	20	20.5	20.0	102	100	69-119	2	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	23.7	24.0	119	120	68-126	1	
Methyl-tert-butyl ether	ug/L	ND	20	20	19.8	19.6	99	98	58-131	1	
Naphthalene	ug/L	ND	20	20	22.9	22.1	115	111	51-123	3	
Toluene	ug/L	ND	20	20	21.9	20.5	110	103	72-115	6	
Xylene (Total)	ug/L	ND	60	60	61.5	59.0	103	98	70-123	4	
1,2-Dichloroethane-d4 (S)	%						84	87	77-119		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Arch-QTR
Pace Project No.: 30122550

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 743684 743685

Parameter	Units	30122349003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
4-Bromofluorobenzene (S)	%						100	101	85-115		
Toluene-d8 (S)	%						102	102	85-115		

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QUALITY CONTROL DATA

Project: Arch-QTR
Pace Project No.: 30122550

QC Batch: MSV/19972
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 30122550012, 30122550013

METHOD BLANK: 744328 Matrix: Water
Associated Lab Samples: 30122550012, 30122550013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/17/14 22:52	
Ethylbenzene	ug/L	ND	1.0	06/17/14 22:52	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/17/14 22:52	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/17/14 22:52	
Naphthalene	ug/L	ND	2.0	06/17/14 22:52	
Toluene	ug/L	ND	1.0	06/17/14 22:52	
Xylene (Total)	ug/L	ND	3.0	06/17/14 22:52	
1,2-Dichloroethane-d4 (S)	%	100	77-119	06/17/14 22:52	
4-Bromofluorobenzene (S)	%	98	85-115	06/17/14 22:52	
Toluene-d8 (S)	%	101	85-115	06/17/14 22:52	

LABORATORY CONTROL SAMPLE: 744329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.8	104	66-122	
Ethylbenzene	ug/L	20	22.7	114	69-119	
Isopropylbenzene (Cumene)	ug/L	20	21.9	109	68-126	
Methyl-tert-butyl ether	ug/L	20	19.5	97	58-131	
Naphthalene	ug/L	20	24.4	122	51-123	
Toluene	ug/L	20	21.7	108	72-115	
Xylene (Total)	ug/L	60	66.1	110	70-123	
1,2-Dichloroethane-d4 (S)	%			98	77-119	
4-Bromofluorobenzene (S)	%			100	85-115	
Toluene-d8 (S)	%			105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 744330 744331

Parameter	Units	30122599003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	17.7	19.8	89	99	66-122	11	
Ethylbenzene	ug/L	ND	20	20	19.8	21.7	99	108	69-119	9	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	18.4	21.2	92	106	68-126	14	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.7	20.6	93	103	58-131	10	
Naphthalene	ug/L	ND	20	20	17.8	21.0	89	105	51-123	16	
Toluene	ug/L	ND	20	20	18.6	20.7	93	103	72-115	10	
Xylene (Total)	ug/L	ND	60	60	56.5	61.6	94	103	70-123	9	
1,2-Dichloroethane-d4 (S)	%						99	99	77-119		
4-Bromofluorobenzene (S)	%						96	101	85-115		

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QUALITY CONTROL DATA

Project: Arch-QTR
Pace Project No.: 30122550

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 744330 744331

Parameter	Units	30122599003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Toluene-d8 (S)	%						105	103	85-115		

SAMPLE DUPLICATE: 747055

Parameter	Units	30122487014 Result	Dup Result	RPD	Qualifiers
Benzene	ug/L	ND	ND		
Ethylbenzene	ug/L	ND	ND		
Isopropylbenzene (Cumene)	ug/L	ND	ND		
Methyl-tert-butyl ether	ug/L	2.2	2.1	4	
Naphthalene	ug/L	ND	ND		
Toluene	ug/L	ND	ND		
Xylene (Total)	ug/L	ND	ND		
1,2-Dichloroethane-d4 (S)	%	102	99	3	
4-Bromofluorobenzene (S)	%	100	99	0	
Toluene-d8 (S)	%	101	103	1	

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Greensburg, PA 15601
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QUALIFIERS

Project: Arch-QTR
Pace Project No.: 30122550

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Arch-QTR
Pace Project No.: 30122550

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30122550001	MW-1	EPA 8260B	MSV/19949		
30122550002	MW-2	EPA 8260B	MSV/19949		
30122550003	MW-3	EPA 8260B	MSV/19949		
30122550004	MW-4	EPA 8260B	MSV/19949		
30122550005	MW-8	EPA 8260B	MSV/19949		
30122550006	MW-8D	EPA 8260B	MSV/19949		
30122550007	MW-9	EPA 8260B	MSV/19949		
30122550008	MW-10	EPA 8260B	MSV/19949		
30122550009	MW-10D	EPA 8260B	MSV/19949		
30122550010	MW-11	EPA 8260B	MSV/19949		
30122550011	MW-12	EPA 8260B	MSV/19949		
30122550012	MW-12D	EPA 8260B	MSV/19972		
30122550013	MW-51	EPA 8260B	MSV/19972		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical™ www.pacelabs.com

Section A Required Client Information:

Company:	Insite Group, Inc
Address:	611 South Irvine Avene
	Sharon, PA 16146
Email To:	lab@insitegroup.org
Phone: 724-347-2101	Fax: 724-347-2139
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Sara Giordano
Copy To:	
Purchase Order No.:	
Project Name:	Arch - QTR
Project Number:	03-07315

Section C Invoice Information:

Attention:	Sara Giordano
Company Name:	Same
Address:	Same
Pace Quote Reference:	
Pace Project Manager:	Samantha Bayura
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Kittanning PA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA 8260 Volatiles (Old PA UST shortlist - unleaded)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 30122550
1	MW-1	WT	G			06/10/14	1511		3				X					X	X		001
2	MW-2	WT	G			06/10/14	1518		3				X					X	X		002
3	MW-3	WT	G			06/10/14	1445		3				X					X	X		003
4	MW-4	WT	G			06/10/14	1418		3				X					X	X		004
5	MW-8	WT	G			06/10/14	1455		3				X					X	X		~~005~~ 005 MW-8 duplicate
6	MW-8D	WT	G			06/10/14	1504		3				X					X	X		006
7	MW-9	WT	G			06/10/14	1510		3				X					X	X		007
8	MW-10	WT	G			06/10/14	1501		3				X					X	X		008
9	MW-10D	WT	G			06/10/14	1452		3				X					X	X		009
10	MW-11	WT	G			06/10/14	1435		3				X					X	X		010
11	MW-12	WT	G			06/10/14	1428		3				X					X	X		011
12	MW-12D	WT	G			06/10/14	1437		3				X					X	X		012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature]	6/11/14	1445	[signature]	6-12-14	0825	2.1	Y	N	N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ADAM GAINES & GEORGE MUELLER

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 6/10/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Section A Required Client Information:

Company:	Insite Group, Inc
Address:	611 South Irvine Avene
	Sharon, PA 16146
Email To:	lab@insitegroup.org
Phone: 724-347-2101	Fax: 724-347-2139
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Sara Giordano
Copy To:	
Purchase Order No.:	
Project Name:	Arch - QTR
Project Number:	03-07315

Section C Invoice Information:

Attention:	Sara Giordano
Company Name:	Same
Address:	Same
Pace Quote Reference:	
Pace Project Manager:	Samantha Bayura
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☒ UST ☐ RCRA ☐ OTHER ____

Site Location STATE: Kittanning PA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA 6260 Volatiles (Old PA LIST shortlist - unleaded)	30	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-51	WT	G			06/10/14	1500		3				X					X				22550.03
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		6/11/14	1445		6-12-14	0855	2.1	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ADAM CALVES / GEORGE MUELLER

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 6/10/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

ATTACHMENT E

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YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Monday August 25, 2014

Report Number: L717297
Samples Received: 08/21/14
Client Project: ARCH ST

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 25, 2014

ESC Sample # : L717297-01

Date Received : August 21, 2014
Description :

Site ID : 03-07315

Sample ID : VP-2

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/19/14 11:19

Parameter	Mol Wght	RDL(ppmv)	Result(ppmv)	mg/m3	Method	Date	Dil.
Volatile Organics							
Benzene	78.1	0.000200	0.000210	0.00067	TO-15	08/22/14	1
Ethylbenzene	106	0.000200	0.000280	0.0012	TO-15	08/22/14	1
Isopropylbenzene	120.2	0.000200	< 0.00020	< 0.00098	TO-15	08/22/14	1
MTBE	88.1	0.000200	< 0.00020	< 0.00072	TO-15	08/22/14	1
Naphthalene	128	0.000630	0.000940	0.0049	TO-15	08/22/14	1
Toluene	92.1	0.000200	0.00120	0.0045	TO-15	08/22/14	1
m&p-Xylene	106	0.000400	0.00130	0.0056	TO-15	08/22/14	1
o-Xylene	106	0.000200	0.000500	0.0022	TO-15	08/22/14	1
1,4-Bromofluorobenzene			113.	% Rec.	TO-15	08/22/14	1

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
The reported analytical results relate only to the sample submitted.
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.
Reported: 08/25/14 13:17 Printed: 08/25/14 13:17

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 25, 2014

ESC Sample # : L717297-02

Date Received : August 21, 2014
Description :

Site ID : 03-07315

Sample ID : VP-1

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/19/14 12:11

Parameter	Mol Wght	RDL(ppmv)	Result(ppmv)	mg/m3	Method	Date	Dil.
Volatile Organics							
Benzene	78.1	0.000200	0.000610	0.0019	TO-15	08/22/14	1
Ethylbenzene	106	0.000200	0.00180	0.0078	TO-15	08/22/14	1
Isopropylbenzene	120.2	0.000200	0.000220	0.0011	TO-15	08/22/14	1
MTBE	88.1	0.000200	< 0.00020	< 0.00072	TO-15	08/22/14	1
Naphthalene	128	0.000630	0.00200	0.010	TO-15	08/22/14	1
Toluene	92.1	0.000200	0.00820	0.031	TO-15	08/22/14	1
m&p-Xylene	106	0.000400	0.00820	0.036	TO-15	08/22/14	1
o-Xylene	106	0.000200	0.00300	0.013	TO-15	08/22/14	1
1,4-Bromofluorobenzene			115.	% Rec.	TO-15	08/22/14	1

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

August 25, 2014

ESC Sample # : L717297-03

Date Received : August 21, 2014
Description :

Site ID : 03-07315

Sample ID : VP-3

Project # : ARCH ST

Collected By : George Mueller
Collection Date : 08/19/14 12:45

Parameter	Mol Wght	RDL(ppmv)	Result(ppmv)	mg/m3	Method	Date	Dil.
Volatile Organics							
Benzene	78.1	0.000200	0.00200	0.0064	TO-15	08/22/14	1
Ethylbenzene	106	0.000200	0.00170	0.0074	TO-15	08/22/14	1
Isopropylbenzene	120.2	0.000200	< 0.00020	< 0.00098	TO-15	08/22/14	1
MTBE	88.1	0.000200	< 0.00020	< 0.00072	TO-15	08/22/14	1
Naphthalene	128	0.000630	0.000870	0.0046	TO-15	08/22/14	1
Toluene	92.1	0.00160	0.100	0.38	TO-15	08/24/14	8
m&p-Xylene	106	0.000400	0.00640	0.028	TO-15	08/22/14	1
o-Xylene	106	0.000200	0.00220	0.0095	TO-15	08/22/14	1
1,4-Bromofluorobenzene			113.	% Rec.	TO-15	08/22/14	1

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
The reported analytical results relate only to the sample submitted.
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.
Reported: 08/25/14 13:17 Printed: 08/25/14 13:17

Summary of Remarks For Samples Printed
08/25/14 at 13:17:46

TSR Signing Reports: 034

log V8260STARS AS V8260UGPA Log as D1 priorty unless rush *Use pkey if in place on client printed COC* Log PAHs as PAHSIM

Sample: L717297-01 Account: INSITE Received: 08/21/14 09:00 Due Date: 08/28/14 00:00 RPT Date: 08/25/14 13:17

Sample: L717297-02 Account: INSITE Received: 08/21/14 09:00 Due Date: 08/28/14 00:00 RPT Date: 08/25/14 13:17

Sample: L717297-03 Account: INSITE Received: 08/21/14 09:00 Due Date: 08/28/14 00:00 RPT Date: 08/25/14 13:17

Insite Group

611 S. Irvine Avenue
Sharon, PA 16146-1165

Billing Information:
Ms. Sara Giordano
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report To:
Ms. Sara Giordano

Email To:
lab@insitegroup.org,sgiordano@insitegroup.org

Project Description:

Phone: 724-347-2101
Fax: 724-347-2139

City/State Collected: Kittanning, PA

Client Project #: Arch St

Lab Project #: INSITE-AIR

Collected by (print): George Mueller

Site/Facility ID #: 03-07315

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
Same Day ... 200%
Next Day ... 100%
Two Day ... 50%
Three Day ... 25%

Date Results Needed:

Immediately Packed on Ice: N X Y

Email? No X Yes
FAX? No Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	# of Containers	TO-15 Summa (BTEXMN)
VP-2	Grab	Air		8/19/14	1119	1	X
VP-1	Grab	Air		8/19/14	1211	1	X
VP-3	Grab	Air		8/19/14	1245	1	X
		Air				1	X

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LAB SCIENCES

L# 171297

L157

Account: INSITE
Template: T68137
Prelogin: P479041
TSR: 034 - Craig Cothron
PB:

Shipped Via: FedEX Ground

Sample # (lab only)
-01
-02
-03

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: 2) Priority

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: UPS FedEx Courier

Temp: Amb °C Bottles Received: 3 + 1 FC

Date: 8/21/14 Time: 04:00

Hold:

Condition: Lab use only:

COC Seal Intact: Y N NA

pH Checked: NCF:

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Heather Kelly	8/20/14	1415	
Received by: (Signature)	Date:	Time:	Received by: (Signature)
			6276740 9078
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

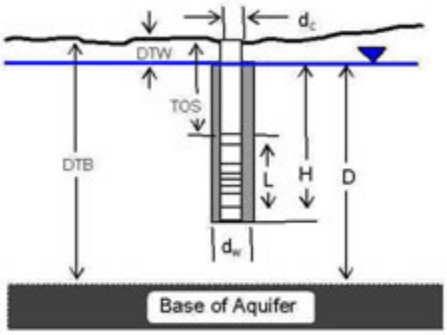
ATTACHMENT F

WELL ID: MW-2 (Slug-Out)

Local ID: Arch Street
Date: 9/4/2003
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	8.25 Inch
Screen Length (L)	15 Feet
Depths to:	
water level (DTW)	15.49 Feet
top of screen (TOS)	9 Feet
Base of Aquifer (DTB)	24 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand



COMPUTED

L_{wetted} =	8.51 Feet
D =	8.51 Feet
H =	8.51 Feet
L/r_w =	24.76
$y_{0\text{-DISPLACEMENT}}$ =	1.53 Feet
$y_{0\text{-SLUG}}$ =	1.53 Feet

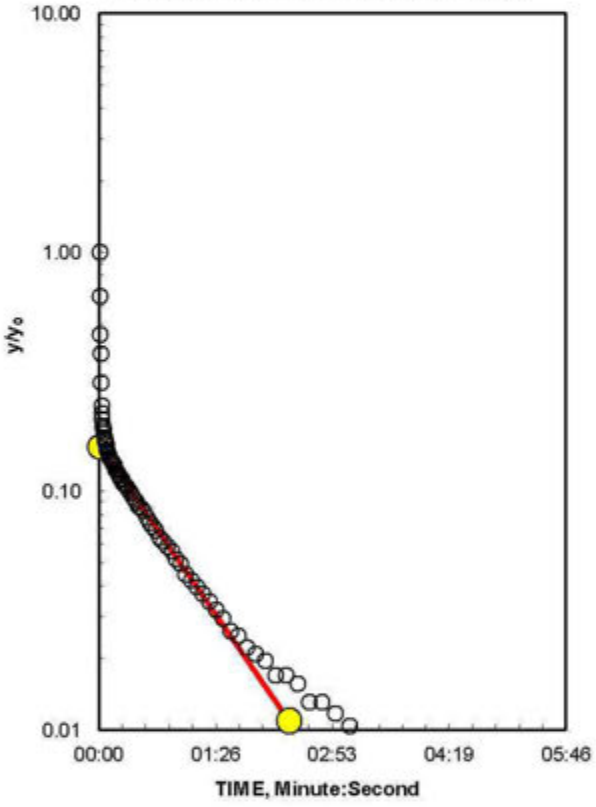
From look-up table using L/r_w

Fully penetrate C =	1.902
ln(Re/rw) =	2.383
Re =	3.73 Feet
Slope =	0.008215 $\log_{10}$/sec
$t_{90\%}$ recovery =	122 sec

Input is consistent.

K = 2 Feet/Day

Adjust slope of line to estimate K



K= 2 is less than likely minimum of 3 for Fine Sand

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

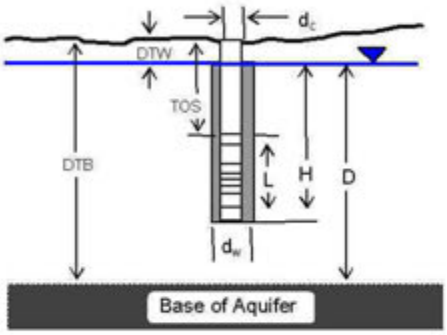
Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:02.4	17.01
2	0:00:02.7	16.48
3	0:00:03.0	16.17
4	0:00:03.3	16.05
5	0:00:03.6	15.91
6	0:00:03.9	15.83
7	0:00:04.2	15.80
8	0:00:04.5	15.78
9	0:00:04.8	15.76
10	0:00:05.1	15.76
11	0:00:05.4	15.74
12	0:00:05.7	15.75
13	0:00:06.0	15.73
14	0:00:06.4	15.73
15	0:00:06.7	15.72
16	0:00:07.1	15.72
17	0:00:07.5	15.71
18	0:00:08.0	15.70
19	0:00:08.4	15.70
20	0:00:08.9	15.69
21	0:00:09.5	15.69
22	0:00:10.0	15.69
23	0:00:10.6	15.68
24	0:00:11.3	15.68
25	0:00:11.9	15.68
26	0:00:12.6	15.67
27	0:00:13.4	15.67
28	0:00:14.2	15.67
29	0:00:15.0	15.66
30	0:00:15.9	15.66
31	0:00:16.8	15.65
32	0:00:17.8	15.65
33	0:00:18.9	15.65
34	0:00:20.0	15.64
35	0:00:21.2	15.64
36	0:00:22.4	15.63
37	0:00:23.8	15.63
38	0:00:25.2	15.63
39	0:00:26.7	15.62
40	0:00:28.2	15.62
41	0:00:29.8	15.61
42	0:00:31.5	15.61
43	0:00:33.3	15.61
44	0:00:35.2	15.60
45	0:00:37.3	15.59

WELL ID: EW-1 (Slug-Out)

Local ID: Arch Street
Date: 9/4/2003
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	4 Inch
Annulus dia. (d_w)	10.5 Inch
Screen Length (L)	20 Feet
Depths to:	
water level (DTW)	13.97 Feet
top of screen (TOS)	9 Feet
Base of Aquifer (DTB)	29 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand



COMPUTED

L_{wetted} =	15.03 Feet
D =	15.03 Feet
H =	15.03 Feet
L/r_w =	34.35
$y_{0\text{-DISPLACEMENT}}$ =	1.46 Feet
$y_{0\text{-SLUG}}$ =	1.29 Feet

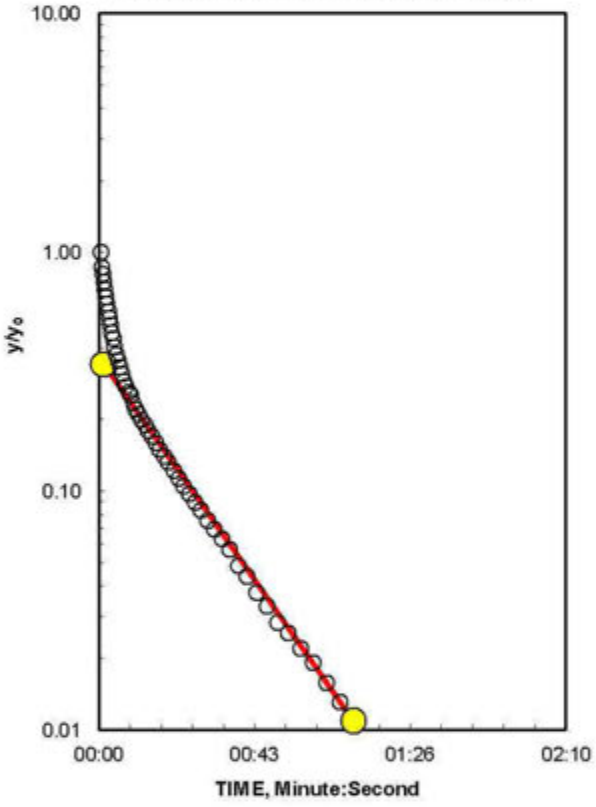
From look-up table using L/r_w

Fully penetrate C =	2.255
ln(Re/rw) =	2.655
Re =	6.22 Feet
Slope =	0.021478 log_{10}/sec
$t_{90\%}$ recovery =	47 sec

Input is consistent.

K = 10 Feet/Day

Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

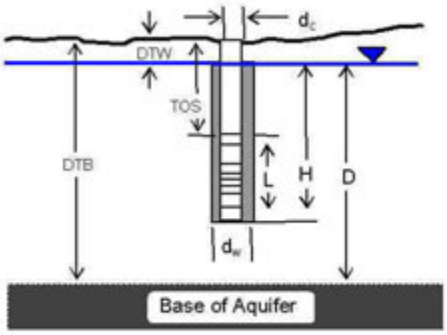
Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:03.6	15.44
2	0:00:03.9	15.24
3	0:00:04.2	15.16
4	0:00:04.5	15.08
5	0:00:04.8	14.99
6	0:00:05.1	14.93
7	0:00:05.4	14.86
8	0:00:05.7	14.80
9	0:00:06.0	14.75
10	0:00:06.4	14.70
11	0:00:06.7	14.65
12	0:00:07.1	14.61
13	0:00:07.5	14.56
14	0:00:08.0	14.52
15	0:00:08.4	14.49
16	0:00:08.9	14.46
17	0:00:09.5	14.43
18	0:00:10.0	14.40
19	0:00:10.6	14.38
20	0:00:11.3	14.36
21	0:00:11.9	14.35
22	0:00:12.6	14.32
23	0:00:13.4	14.30
24	0:00:14.2	14.28
25	0:00:15.0	14.27
26	0:00:15.9	14.25
27	0:00:16.8	14.24
28	0:00:17.8	14.22
29	0:00:18.9	14.21
30	0:00:20.0	14.19
31	0:00:21.2	14.18
32	0:00:22.4	14.17
33	0:00:23.8	14.16
34	0:00:25.2	14.14
35	0:00:26.7	14.13
36	0:00:28.2	14.12
37	0:00:29.8	14.11
38	0:00:31.5	14.10
39	0:00:33.3	14.09
40	0:00:35.2	14.08
41	0:00:37.3	14.07
42	0:00:39.5	14.06
43	0:00:41.8	14.05
44	0:00:44.3	14.04
45	0:00:46.9	14.03

WELL ID: MW-10 (Slug-Out)

Local ID: Arch Street
Date: 10/28/2013
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	6 Inch
Screen Length (L)	15 Feet
Depths to:	
water level (DTW)	16.96 Feet
top of screen (TOS)	7 Feet
Base of Aquifer (DTB)	22 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand



COMPUTED

L_{wetted}	5.04 Feet
D =	5.04 Feet
H =	5.04 Feet
L/r_w =	20.16
$y_{0\text{-DISPLACEMENT}}$ =	1.53 Feet
$y_{0\text{-SLUG}}$ =	1.29 Feet

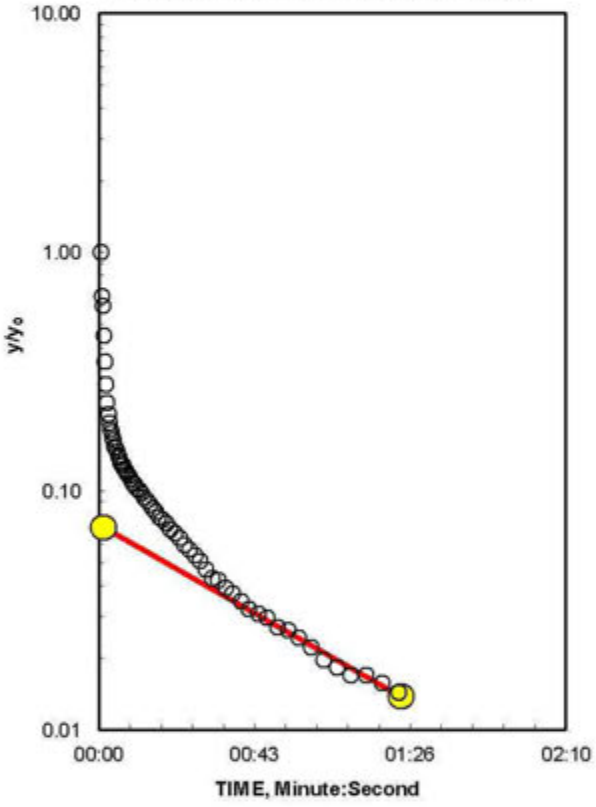
From look-up table using L/r_w

Fully penetrate C =	1.733
ln(Re/rw) =	2.212
Re =	2.28 Feet
Slope =	0.008559 $\log_{10}$/sec
$t_{90\%}$ recovery =	117 sec

Input is consistent.

K = 3 Feet/Day

Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

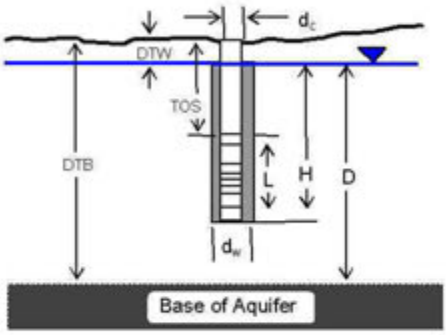
Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:00.6	18.49
2	0:00:00.9	17.96
3	0:00:01.2	17.87
4	0:00:01.5	17.65
5	0:00:01.8	17.49
6	0:00:02.1	17.39
7	0:00:02.4	17.32
8	0:00:02.7	17.28
9	0:00:03.0	17.26
10	0:00:03.3	17.24
11	0:00:03.6	17.23
12	0:00:03.9	17.22
13	0:00:04.2	17.21
14	0:00:04.5	17.20
15	0:00:04.8	17.19
16	0:00:05.1	17.18
17	0:00:05.4	17.18
18	0:00:05.7	17.17
19	0:00:06.0	17.16
20	0:00:06.4	17.16
21	0:00:06.7	17.16
22	0:00:07.1	17.15
23	0:00:07.5	17.15
24	0:00:08.0	17.14
25	0:00:08.4	17.14
26	0:00:08.9	17.13
27	0:00:09.5	17.13
28	0:00:10.0	17.12
29	0:00:10.6	17.12
30	0:00:11.3	17.11
31	0:00:11.9	17.11
32	0:00:12.6	17.10
33	0:00:13.4	17.10
34	0:00:14.2	17.10
35	0:00:15.0	17.09
36	0:00:15.9	17.09
37	0:00:16.8	17.08
38	0:00:17.8	17.08
39	0:00:18.9	17.07
40	0:00:20.0	17.07
41	0:00:21.2	17.06
42	0:00:22.4	17.06
43	0:00:23.8	17.05
44	0:00:25.2	17.05
45	0:00:26.7	17.04

WELL ID: MW-12 (Slug-Out)

Local ID: Arch Street
Date: 10/28/2013
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	6 Inch
Screen Length (L)	15 Feet
Depths to:	
water level (DTW)	16.38 Feet
top of screen (TOS)	7 Feet
Base of Aquifer (DTB)	22 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand



COMPUTED

L_{wetted}	5.62 Feet
D =	5.62 Feet
H =	5.62 Feet
L/r_w =	22.48
$y_{0\text{-DISPLACEMENT}}$ =	1.39 Feet
$y_{0\text{-SLUG}}$ =	1.29 Feet

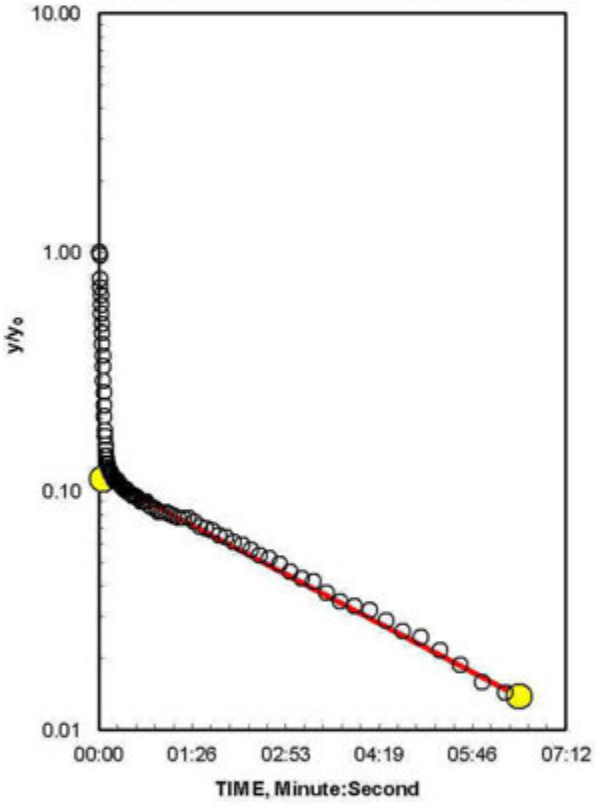
From look-up table using L/r_w

Fully penetrate C =	1.822
ln(Re/rw) =	2.302
Re =	2.50 Feet
Slope =	0.002364 $\log_{10}$/sec
$t_{90\%}$ recovery =	423 sec

Input is consistent.

K = 0.7 Feet/Day

Adjust slope of line to estimate K



K= 0.7 is less than likely minimum of 3 for Fine Sand

REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

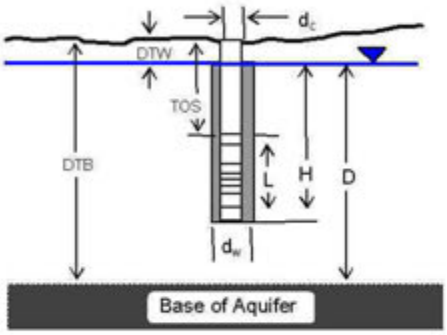
Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:00.9	17.77
2	0:00:01.5	17.46
3	0:00:02.1	17.30
4	0:00:02.7	17.15
5	0:00:03.3	17.02
6	0:00:03.9	16.89
7	0:00:04.5	16.78
8	0:00:05.1	16.70
9	0:00:05.7	16.63
10	0:00:06.4	16.60
11	0:00:07.1	16.58
12	0:00:08.0	16.56
13	0:00:08.9	16.56
14	0:00:10.0	16.55
15	0:00:11.3	16.54
16	0:00:12.6	16.54
17	0:00:14.2	16.54
18	0:00:15.9	16.53
19	0:00:17.8	16.53
20	0:00:20.0	16.53
21	0:00:22.4	16.52
22	0:00:25.2	16.52
23	0:00:28.2	16.52
24	0:00:31.5	16.51
25	0:00:35.2	16.51
26	0:00:39.5	16.51
27	0:00:44.3	16.51
28	0:00:49.7	16.50
29	0:00:55.7	16.49
30	0:01:02.5	16.49
31	0:01:10.1	16.49
32	0:01:18.7	16.49
33	0:01:28.4	16.48
34	0:01:39.3	16.48
35	0:01:51.5	16.47
36	0:02:05.1	16.47
37	0:02:20.5	16.46
38	0:02:37.8	16.45
39	0:02:57.2	16.44
40	0:03:19.0	16.44
41	0:03:43.5	16.43
42	0:04:10.9	16.42
43	0:04:41.6	16.42
44	0:05:16.2	16.41
45	0:05:54.9	16.40

WELL ID: MW-8D (Slug-Out)

Local ID: Arch Street
Date: 10/28/2013
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	6 Inch
Screen Length (L)	10 Feet
Depths to:	
water level (DTW)	16.51 Feet
top of screen (TOS)	25 Feet
Base of Aquifer (DTB)	35 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand



COMPUTED

L_{wetted}	10 Feet
D =	18.49 Feet
H =	18.49 Feet
L/r_w =	40.00
$y_{0\text{-DISPLACEMENT}}$ =	2.07 Feet
$y_{0\text{-SLUG}}$ =	2.15 Feet

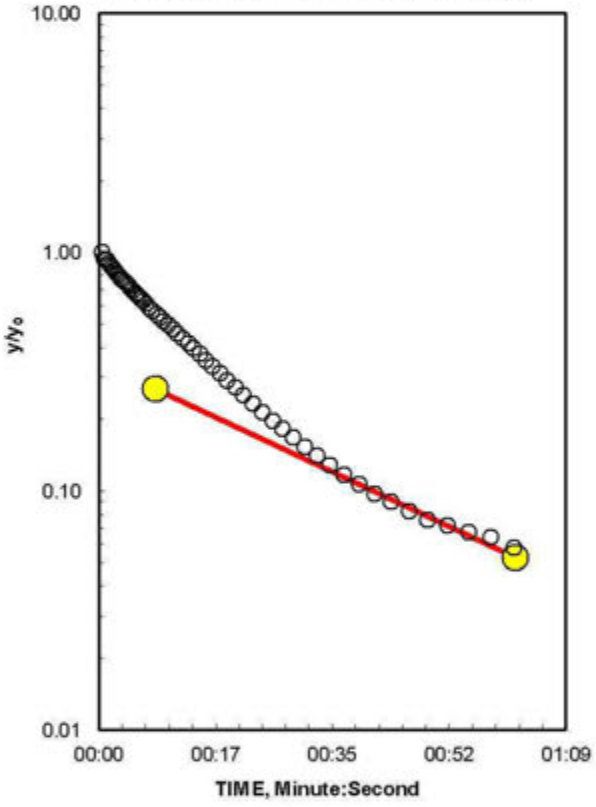
From look-up table using L/r_w

Fully penetrate C =	2.451
ln(Re/rw) =	3.156
Re =	5.87 Feet
Slope =	0.013265 $\log_{10}$/sec
$t_{90\%}$ recovery =	75 sec

Input is consistent.

K = 3 Feet/Day

Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

Reduced Data

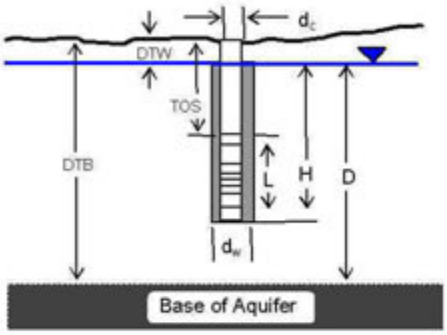
Entry	Time, Hr:Min:Sec	Water Level
1	0:00:01.5	18.45
2	0:00:01.8	18.33
3	0:00:02.1	18.31
4	0:00:02.4	18.25
5	0:00:02.7	18.20
6	0:00:03.0	18.16
7	0:00:03.3	18.12
8	0:00:03.6	18.08
9	0:00:03.9	18.04
10	0:00:04.2	18.00
11	0:00:04.5	17.97
12	0:00:04.8	17.94
13	0:00:05.1	17.91
14	0:00:05.4	17.88
15	0:00:05.7	17.84
16	0:00:06.0	17.81
17	0:00:06.4	17.78
18	0:00:06.7	17.75
19	0:00:07.1	17.71
20	0:00:07.5	17.68
21	0:00:08.0	17.64
22	0:00:08.4	17.60
23	0:00:08.9	17.57
24	0:00:09.5	17.52
25	0:00:10.0	17.49
26	0:00:10.6	17.45
27	0:00:11.3	17.41
28	0:00:11.9	17.37
29	0:00:12.6	17.33
30	0:00:13.4	17.28
31	0:00:14.2	17.24
32	0:00:15.0	17.20
33	0:00:15.9	17.16
34	0:00:16.8	17.11
35	0:00:17.8	17.07
36	0:00:18.9	17.03
37	0:00:20.0	16.98
38	0:00:21.2	16.95
39	0:00:22.4	16.90
40	0:00:23.8	16.86
41	0:00:25.2	16.83
42	0:00:26.7	16.79
43	0:00:28.2	16.76
44	0:00:29.8	16.73
45	0:00:31.5	16.70

WELL ID: MW-12D (Slug-Out)

Local ID: Arch Street
Date: 10/28/2013
Time: 0:00

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	6 Inch
Screen Length (L)	10 Feet
Depths to:	
water level (DTW)	16.3 Feet
top of screen (TOS)	25 Feet
Base of Aquifer (DTB)	35 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Sand and Gravel Mixes



COMPUTED

L_{wetted}	10 Feet
D =	18.7 Feet
H =	18.7 Feet
L/r_w =	40.00
$y_{0\text{-DISPLACEMENT}}$ =	1.81 Feet
$y_{0\text{-SLUG}}$ =	2.15 Feet

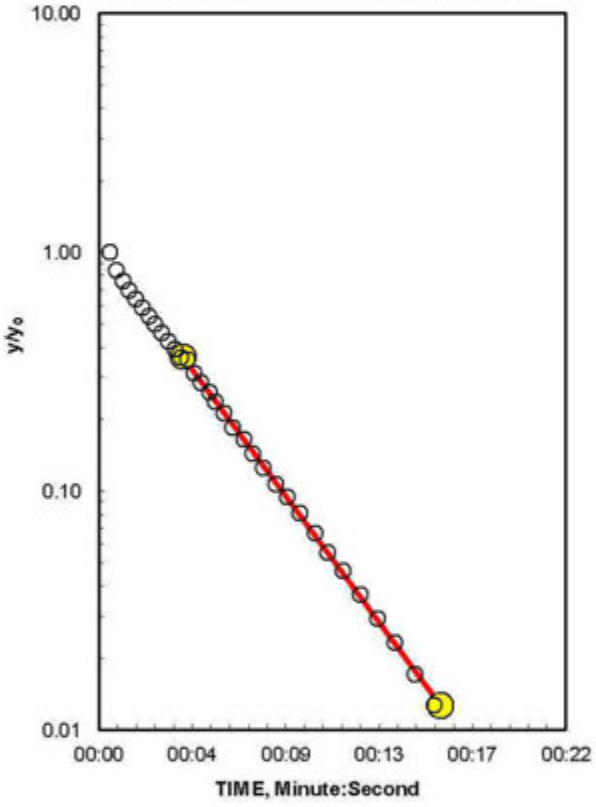
From look-up table using L/r_w

Fully penetrate C =	2.451
ln(Re/rw) =	3.163
Re =	5.91 Feet
Slope =	0.122534 $\log_{10}$/sec
$t_{90\%}$ recovery =	8 sec

Input is consistent.

K = 30 Feet/Day

Adjust slope of line to estimate K



REMARKS:

Bouwer and Rice analysis of slug test, WRR 1976

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:01.8	18.11
2	0:00:02.1	17.82
3	0:00:02.4	17.67
4	0:00:02.7	17.56
5	0:00:03.0	17.46
6	0:00:03.3	17.36
7	0:00:03.6	17.28
8	0:00:03.9	17.21
9	0:00:04.2	17.13
10	0:00:04.5	17.07
11	0:00:04.8	17.01
12	0:00:05.1	16.96
13	0:00:05.4	16.95
14	0:00:05.7	16.87
15	0:00:06.0	16.82
16	0:00:06.4	16.77
17	0:00:06.7	16.73
18	0:00:07.1	16.69
19	0:00:07.5	16.64
20	0:00:08.0	16.60
21	0:00:08.4	16.56
22	0:00:08.9	16.53
23	0:00:09.5	16.50
24	0:00:10.0	16.47
25	0:00:10.6	16.45
26	0:00:11.3	16.42
27	0:00:11.9	16.40
28	0:00:12.6	16.39
29	0:00:13.4	16.37
30	0:00:14.2	16.36
31	0:00:15.0	16.34
32	0:00:15.9	16.33
33	0:00:16.8	16.33
34	0:00:17.8	16.32
35	0:00:18.9	16.31
36	0:00:20.0	16.31
37	0:00:21.2	16.30

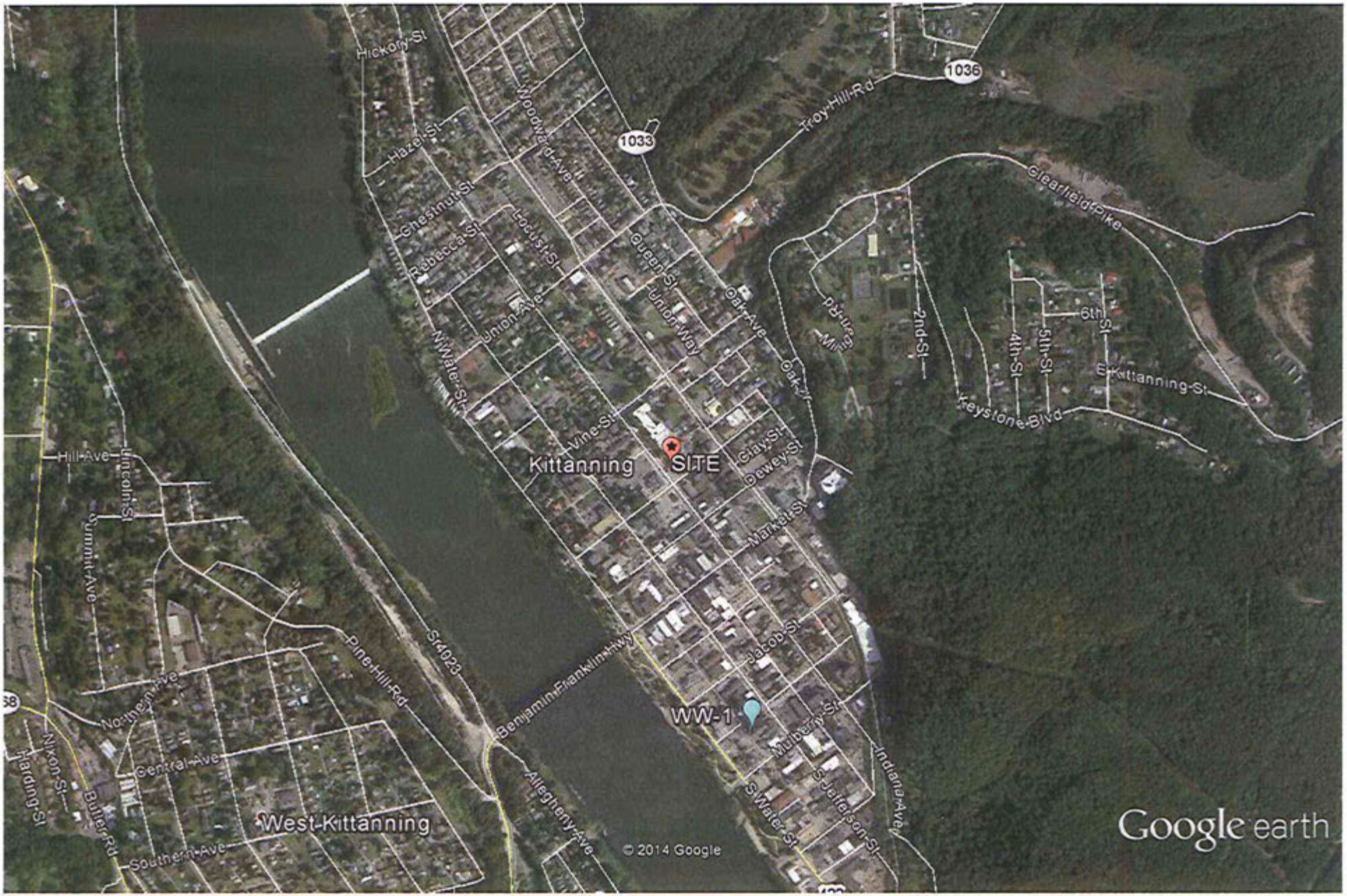
ATTACHMENT G

Water Well Survey Summary Table

PA Topographic & Geologic Survey - PaGWIS
0.5 mile search radius

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201

Map ID	WW-1
WellID	1572
DateDrilled	1/1/1926
TypeOfActivity	
WellAddress	
WellZipCode	
County	ARMSTRONG
QuadName	KITTANNING
Municipality	KITTANNING BORO
LatitudeDD	40.81167
LongitudeDD	-79.51806
Drillers_Well_ID	
LocalWellNumber	AR 13
Driller	15
Licensee	ALFRED DAILEY
Owner	MEADOW GOLD DAIRIES
WellDepth	42
DepthToBedrock	
SaltwaterZone	
YieldMeasurementMethod	UNKNOWN
WellYield	150
StaticWaterLevel	22
WaterLevelAfterYieldTest	36
LengthOfTest	
WellUse	WITHDRAWAL
WaterUse	INDUSTRIAL


Hickory St
Hazel St
Chestnut St
Rebecca St
Woodward Ave
Locust St
Union Ave
Queen St
Union Way
Oak Ave
Oak Zr
Troy Hill Rd
1033
1036
Clearfield Pike
2nd St
4th St
5th St
6th St
E Kittanning St
Keystone Blvd
N Water St
Vine St
Kittanning
SITE
Clay St
Dewey St
Market St
Jacob St
WW-1
Mulberry St
S Water St
S Jefferson St
Indiana Ave
Benjamin Franklin Hwy
Allegheny Ave
Sr4023
Pine Hill Rd
Hill Ave
Lincoln St
Summit Ave
Northern Ave
Central Ave
Southern Ave
Nixon St
Harding St
Butler Rd
West Kittanning
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Google earth
miles
km
1
1

ATTACHMENT H

April 7, 2011

Ms. Sara Giordono
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

RE: Gasoline Oxidation Treatability Study
Honey Bear Mini Mart Site, Kittanning, Pennsylvania

Ms. Giordono:

ReSolution Partners completed a treatability study to oxidize gasoline constituents at the Honey Bear Mini Mart Site in Kittanning, Pennsylvania. The following sections provide a summary of the project background; laboratory approach and observations; and analytical result and trend observations for the effectiveness of FMC's Klozur™ product at this site.

Background

The Insite Group, Inc. (Insite) is planning to implement *in situ* oxidation of gasoline residuals in saturated and unsaturated soil at a convenience store in Kittanning, Pennsylvania. The project remedial objective is to reduce benzene and methyl tert-butyl ether (MTBE) concentrations to less than 0.5 mg/kg and 2 mg/kg, respectively. Historical concentrations are on the order of 1 to 10 mg/kg of benzene and 10 to 30 mg/kg of MTBE. These goals are the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHSs) for the gasoline constituents. Insite has designed a remediation approach to include the injection of alkaline-activated Klozur (FMC sodium persulfate). Insite collected four soil samples RP-1, RP-2, RP-3 and RP-4 and submitted them to ReSolution Partners for an oxidation treatability study for the gasoline constituents.

Baseline Characterization

Each of the four soil samples were subjected to baseline characterization consisting of the following tasks:

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- Soil homogenization
- Compositional analysis (reported as mg/kg, dry wt.)[1] of the gasoline SHS parameters (benzene, ethylbenzene, cumene, MTBE, naphthalene, toluene, and total xylenes) to establish a baseline against which to assess oxidation performance
- Total Oxidant Demand (TOD) determinations
- Alkalinity demand determination to estimate the required dose of sodium hydroxide (NaOH) needed to maintain an oxidation pH >10.5 for persulfate activation during the oxidation reaction

The baseline composition of the soil samples is provided in Table 1 (listed as untreated). The benzene concentrations in the samples ranged from 0.0053 to 1.2 mg/kg compared to the more restrictive groundwater protection SHS of 0.5 mg/kg. The MTBE concentrations ranged from 0.010 to 0.13 mg/kg against a SHS of 2 mg/kg. The baseline concentrations are significantly less than the historical concentration ranges for these two compound as noted above.

The TOD results demonstrated that the baseline Klozur requirement for the soil samples RP-1, RP-2, RP-3 and RP-4 was 4.9 g/kg, 7.7 g/kg, 6.6 g/kg and 7.7 g/kg, respectively. This is an average dosage of 0.67% by weight Klozur in soil. The alkaline activator used for this study was sodium hydroxide.

The average alkaline demand for the site soils dosed with 0.67 wt% Klozur is 18.25 mL (25% NaOH)/(kg soil).

Treatability Study Methods

Volatile petroleum hydrocarbons can be quickly lost to volatilization during soil mixing. Therefore a brief homogenization step by mechanical mixing was performed to maximize retention of sufficient hydrocarbon concentrations for this study.

Persulfate was used as the oxidant in all trials. Each soil sample was subjected to three dosages of persulfate (0.5%, 2% and 5%) based on the as-received weight of the soil (total of 12 trials). The dosage range selection was based on the TOD determination and on Insite's project objectives.

Each treated sample was mixed in a 4-oz glass jar provided by the analytical laboratory. Immediately after mixing, the rim of the jar was carefully cleaned to remove any residue.

[1]Analyses was performed by a ESC, Mount Juliet, Tennessee.

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The Teflon-lined lid was then sealed tightly to the rim of each jar. The Klozur reaction is exothermic. To resemble the potential subsurface temperature conditions during Klozur treatment, the jars were placed in a 40°C oven and the various aliquots were allowed to react for 48 hours, 1 week, 2 weeks, and 4 weeks. The aliquots were submitted to the analytical laboratory for analysis of the gasoline SHS constituents. The target for the study is the destruction of benzene and MTBE to levels below the SHSs.

Results

Two of the SHS gasoline analytes [benzene and methyl-tert-butyl-ether (MTBE)] are established by Insite as constituents of particular concern to this project because they historically exceed the State of Pennsylvania regulatory standards. The change in concentration for these analytes with respect to reaction time and to Klozur dosage is calculated as percent change and is also provided in Table 1. To understand the general effectiveness of Klozur to reduce the site gasoline constituents, the percent change was also calculated for the sum of the SHS gasoline analyte (BTEX) concentrations in each sample and is also provided in Table 1. One-half of the reporting limit was used in the calculations when concentrations below reporting limits.

The reaction time series for each dosage had an occasional result that was anomalous to a decreasing trend. Although each soil sample (RP-1, RP-2, RP-3 and RP-4) was homogenized prior to treatment, most of these anomalies may be due to heterogeneous BTEX concentrations resulting from the limited homogenization effort. The very low baseline concentrations in most samples also made differentiation of oxidation-driven concentration changes from laboratory analytical variability difficult.

The BTEX results for the RP-4 untreated sample (4-UN-28D) were anomalously low relative to those of the treated samples. These low results could be due to soil heterogeneity. More likely the low results are from volatilization loss due to a poor seal on that aliquot jar, even though considerable care was taken to attain a sufficient seal on the reaction jars. Regardless, the low results are not likely representative of the untreated RP-4 BTEX concentrations. The percent change in concentration for the RP-4 samples are therefore compared to the sample with the lowest Klozur dosage (0.5%) and the shortest reaction time (2 day).

Trend Observations

Table 1 tabulates the results of the analyses and Table 2 summarizes the concentration change trends with reagent dose and reaction time. There are significant differences

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between the four tested samples. In general, samples RP-1and -4 yielded better reductions than samples RP-2 and -3. The mean concentrations provided in Table 2 "smooth" the variability among the several samples and provide a general response to the oxidation application. In addition, the remedial action needs to target all of the three stated Insite goals, concurrent reduction of benzene, MTBE and total BTEX. Therefore, the average reduction across all three targets at each dose and reaction time is provided on Table 2.

Persulfate dosage increases generally resulted in decreasing benzene, MTBE, and total BTEX concentrations at any given reaction time. Increasing reaction times at any given persulfate dose also resulted in decreasing benzene, MTBE, and total BTEX concentrations. The lowest persulfate dose (0.5 wt%) produced reductions of no more than 78 percent for all compounds even at the longest (28 day) reaction times. At a 2 wt% dose the maximum concentration reduction was between 87 and 89 percent, but the improvement with increased reaction time after 7 days was limited. A persulfate dose of 5 wt% reached a 99 percent reduction in 28 days. At this dose, the increased reaction time significantly improved the average concentration reductions.

As noted earlier, the baseline concentrations were significantly less than the historical soil concentrations reported to the site. Assuming the destruction efficiencies observed at the treatability study concentrations can be applied to the historical data suggests the following full-scale effects:

	Dose (wt%)	Reaction Time (days)	Reduction (5%)	Starting Concentration (mg/kg)	Final Concentration (mg/kg)	SHS Soil to GW
Benzene	2	7	82	5	1	0.5
	5	28	99		0.05	
MTBE	2	7	87	10	1.3	2
	5	28	89		1.1	

Accepting the extrapolation of the low concentration treatability study soil results to the higher historical concentrations suggests that at least a 5 wt% persulfate dose should be allowed to react for at least 28 days to achieve the SHS.

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If you have questions regarding the results of the treatability study, please contact Kevin Baker at 608.669.6949 or kbaker@resolutionpartnersllc.net.

Sincerely,

Kevin Baker

Kevin Baker, P.G.
Technical Coordinator

Attachments

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Table 1
Gasoline Oxidation Treatability Study — Results Summary
Insite Group — Honey Bear Mini Mart Site, Kittanning, Pennsylvania

Soil Sample	Sample ID	Klozure Dosage (%, wt)	Reaction Time (days)	Benzene		Ethylbenzene	Isopropylbenzene (Cumene)	MTBE		Naphthalene	Toluene	Total BTEX [1]	
				all units in mg/kg									
SHS - Direct Contact, Residential 0-15				57	change[1]	10,000	7,700	620	change[1]	4,400	10,000	N/A	change[1]
SHS - Used Aquifer, Residential Soil to GW				0.5	(%)	70	600	2	(%)	25	100	N/A	(%)
RP-1	1– UN– 28D	untreated	28	**1.2**		0.48 U	0.12 J	0.13 J		0.17 U	0.62 U	2.1	
	1– LO– 02D	0.5	2	0.12	-90	0.017	0.0013 J	0.050	-62	0.11	0.032	0.33	-84
	1– LO– 07D		7	0.086	-93	0.0073	0.00054 J	0.072	-45	0.031	0.02	0.22	-90
	1– LO– 14D		14	0.068	-94	0.0046	0.00033 U	0.038	-71	0.016	0.016	0.12	-94
	1– LO– 28D		28	0.25	-79	0.046 J	0.012 U	0.03 J	-77	0.12 J	0.012 J	0.45	-78
	1– MD– 02D	2	2	0.13	-89	0.0046 V3	0.00044 J, V3	0.012	-91	0.083	0.019 V3	0.25	-88
	1– MD– 07D		7	0.024	-98	0.0016	0.0014 U	0.0062	-95	0.016	0.0049 J	0.050	-98
	1– MD– 14D		14	0.0097	-99	0.00075 J	0.00033 U	0.0020	-98	0.0086	0.0025 J	0.023	-99
	1– MD– 28D		28	0.25	-79	0.066	0.012 U	0.023 J	-82	0.036 J	0.11 J	0.48	-77
	1– HI– 02D	5	2	0.021	-96	0.0013 U	0.0013 U	0.0031	-98	0.0094	0.0018 J	0.035	-96
	1– HI– 07D		7	0.013	-99	0.0013 U	0.0013 U	0.00075 J	-99	0.0033 J	0.0013 J	0.019	-99
	1– HI– 14D		14	0.006	-100	0.00032 U	0.00033 U	0.00036 U	-100	0.00091 J	0.0007 J	0.0081	-100
	1– HI– 28D		28	0.00078 J	-100	0.00032 U	0.00033 U	0.00036 U	-100	0.00028 U	0.00033 U	0.0016	-100
RP-2	2– UN– 28D	untreated	28	0.28		1.6	1.0	0.011 U	*	1.8	0.23	4.9	
	2– LO– 02D	0.5	2	0.077	-73	0.63	0.75	0.043 U	*	1.1	0.06 J	2.7	-46
	2– LO– 07D		7	0.19	-32	0.77	0.78	0.094 U	*	1.5	0.062 J	3.4	-31
	2– LO– 14D		14	0.25	-11	0.53	1.1	0.052 U	*	2	0.15 J	4.1	-17
	2– LO– 28D		28	0.087	-69	0.23	0.26	0.012 U	*	1.1	0.079 J	1.8	-64
	2– MD– 02D	2	2	0.24 U	-57	0.67	0.82	0.24 U	*	0.86 J	0.1 J	2.8	-43
	2– MD– 07D		7	0.044 J	-84	0.29	0.62	0.049 U	*	0.37	0.025 J	1.4	-72
	2– MD– 14D		14	0.035 J	-88	0.1	0.12	0.013 U	*	0.1 J	0.034 J	0.40	-92
	2– MD– 28D		28	0.028 J	-90	0.16	0.074	0.012 U	*	0.19 J	0.032 J	0.50	-90
	2– HI– 02D	5	2	0.17	-39	1.1	0.95	0.046 U	*	0.34	0.13 J	2.7	-44
	2– HI– 07D		7	0.24 U	-57	0.81	0.93	0.24 U	*	0.11 J	1.2 U	2.8	-43
	2– HI– 14D		14	0.027 J	-90	0.25	0.49	0.012 U	*	0.062 J	0.027 J	0.87	-82
	2– HI– 28D		28	0.00096 J	-100	0.00032 U	0.00082 J	0.00036 U	*	0.00078 J	0.00064 J	0.0037	-100
RP-3	3– UN– 28D	untreated	28	0.14 J		13	9.8	0.072 U	*	9	1.3	33	
	3– LO– 02D	0.5	2	0.24 U	-14	10	8.4	0.24 U	*	5.9	0.71 J	25	-24
	3– LO– 07D		7	**0.94** U	A	13	12	0.94 U	*	8.8	0.78 J	36	A
	3– LO– 14D		14	0.063 U	-78	8.6	8.6	0.053 U	*	6.0	0.35 J	24	-29
	3– LO– 28D		28	0.067 U	-76	5.9	7.4	0.056 U	*	6.9	0.22 J	21	-38
	3– MD– 02D	2	2	0.23 U	-18	8.6	7.5	0.23 U	*	5.3	0.58 J	22	-33
	3– MD– 07D		7	**0.99** U	A	11	11	0.99 U	*	7.0	0.57 J	31	A
	3– MD– 14D		14	0.029 J	-79	5.0	7.3	0.013 U	*	2.7	0.061 J	15	-55
	3– MD– 28D		28	0.016 U	-94	0.93	4.3	0.013 U	*	1.6	0.035 J	6.9	-79
	3– HI– 02D	5	2	**5.0** U	A	26 V3	19	**5.0** U	*	8.4 J	2.2 J, V3	63	A
	3– HI– 07D		7	0.072 J	-49	9	7.6	0.088 U	*	2.8	0.58	20	-40
	3– HI– 14D		14	0.032 J	-77	8.5	8.2	0.012 U	*	0.41	0.31	17	-48
	3– HI– 28D		28	0.014 U	-95	0.19	1.7	0.012 U	*	0.19 J	0.036 J	2.1	-94
RP-4	4– UN– 28D	untreated	28	0.0053	L	0.0057	0.028	0.010	L	0.023	0.0041 J	0.076	L
	4– LO– 02D	0.5	2	0.06 U	L	0.023 J	0.073	0.060 U	L	0.12 J	0.30 U	0.46	L
	4– LO– 07D		7	0.048 U	-60	0.048 U	0.04 J	0.048 U	-60	0.24 U	0.24 U	0.38	-18
	4– LO– 14D		14	0.014 U	-88	0.017 J	0.039 J	0.012 U	-90	0.043 J	0.011 U	0.12	-73
	4– LO– 28D		28	0.0047	-92	0.00032 U	0.0034	0.0021	-97	0.0062 J	0.00076 J	0.017	-96
	4– MD– 02D	2	2	0.051 U	-58	0.051 U	0.051 J	0.051 U	-58	0.019 J	0.25 U	0.30	-35
	4– MD– 07D		7	0.0014 U	-99	0.0014 U	0.0016	0.0016	-97	0.0068 U	0.0068 U	0.011	-98
	4– MD– 14D		14	0.015 U	-88	0.011 U	0.012 U	0.012 U	-90	0.0098 U	0.012 U	0.036	-92
	4– MD– 28D		28	0.00042 U	-100	0.00032 U	0.00033 U	0.00036 U	-100	0.00042 J	0.00033 U	0.0013	-100
	4– HI– 02D	5	2	0.046 U	-62	0.046 U	0.049	0.046 U	-62	0.026 J	0.23 U	0.28	-38
	4– HI– 07D		7	0.0013 U	-99	0.0013 U	0.009	0.0013 U	-99	0.0065 U	0.0065 U	0.018	-96
	4– HI– 14D		14	0.014 U	-88	0.010 U	0.026 J	0.012 U	-90	0.0091 U	0.011 U	0.060	-87
	4– HI– 28D		28	0.00042 U	-100	0.00032 U	0.00033 U	0.00057 J	-99	0.00098 J	0.00033 U	0.0020	-100

NOTES:

SHS The Pennsylvania Department of Environmental Protection Statewide Health Standards (SHSs) for the gasoline constituents.

1 Results reported as not detected were included in the total BTEX and % change calculations at one half the reported detection limit. Total BTEX includes results from all of the analytes listed above. Positive change values are in blue text and negative change values are in red text.

BOLD Values in **BOLD** text occur at or above the SHS Residential Soil to GW regulatory limit.

A Value had anomalously high detection limit, no change is calculated.

U ND (Not Detected)

J Estimated value is below the lowest calibration point. Confidence correlates with concentration.

V3 Additional QC Info: The internal standard exhibited poor recovery due to sample matrix interference. The analytical results will be biased high. Results below the detection limit are unaffected.

* All values for this treatment series were below detectable limits, no change is calculated.

L All results for the untreated sample for RP-4 (4-UN-28D) were anomalously low relative to other samples in the treated time series. The concentration change is calculated relative to the 2 day reaction time sample of the low dosage series.

Table 2
Gasoline Oxidation Treatability Study - Concentrations and Reaction Time Trend Summary
Insite Group -- Honey Bear Mini Mart Site, Kittanning, Pennsylvania

		Reduction in Concentrations (%)											
Persulfate Dose (wt%)		0.5				2				5			
Reaction Time (days)		2	7	14	28	2	7	14	28	2	7	14	28
Benzene	RP-1	90	93	94	79	89	98	99	79	98	99	100	100
	RP-2	73	32	11	69	57	84	88	90	39	57	90	100
	RP-3	14	*	78	76	18	*	79	94	*	49	77	95
	RP-4	*	60	88	92	*	49	77	95	62	99	88	100
	Mean	59	62	68	79	55	77	86	90	66	76	89	99
MTBE	RP-1	62	45	71	77	91	95	98	82	98	99	100	100
	RP-2	*	*	*	*	*	*	*	*	*	*	*	*
	RP-3	*	*	*	*	*	*	*	*	*	*	*	*
	RP-4	*	60	90	97	58	97	90	100	62	99	90	99
	Mean	62	53	81	87	75	96	94	91	80	99	95	100
Total BTEX	RP-1	84	90	94	78	88	98	99	77	98	99	100	100
	RP-2	46	31	17	64	43	72	93	90	44	43	82	100
	RP-3	24	*	29	38	33	*	55	79	*	40	48	94
	RP-4	*	18	73	96	35	98	92	100	38	97	87	100
	Mean	51	46	53	69	50	89	85	87	60	70	79	99
Average for All Compounds		**57**	**54**	**67**	**78**	**60**	**87**	**88**	**89**	**69**	**82**	**88**	**99**

* Anomalous result, percent change not determined.

Inconsistent trend with time.

ATTACHMENT I

INSITE GROUP, INC.

January 23, 2013

Brian Dunst, P.G.
Environmental Cleanup Program
Pennsylvania Department of Environmental Protection
400 Waterfront Drive
Pittsburgh, PA 15222

RE: Klozur® Persulfate Injection Pilot Study Report
Honey Bear Mini-Mart
200 N. McKean Street
Kittanning, PA 16201
Facility ID No. 03-07315

Dear Mr. Dunst:

Insite Group, Inc. (IGI) completed a pilot study on behalf of Graft Oil Company (Graft Oil) to evaluate the effectiveness of Klozur® Persulfate (Klozur) on gasoline contaminated soil and groundwater at the site. The pilot study followed a treatability study that indicated the application of Klozur resulted in contaminant destruction. This Pilot Study Report provides background information for the site, a discussion of the selected oxidant, a summary of a benchtop treatability study, discussions of the design, implementation and results of the pilot test, contaminant destruction calculations, revised contaminant mass estimates, application to full scale implementation, and conclusions.

Background

The property is approximately 130 feet by 37 feet in area, and includes one structure (a Honey Bear Mini-Mart convenience store, which is connected to another structure that houses a hair salon and a law office), two dispenser islands and one overhead canopy. The surface is concrete. Neighboring properties include a U.S. Post Office, a church, a school and a residence. A site map is provided as Figure 1.

A release of unleaded gasoline was reported in April 2002 when soil and groundwater impacts were identified during field activities conducted prior to a planned upgrade of the former underground storage tank (UST) system. The release occurred in product piping at the dispenser island and moved downward through soil and horizontally through the piping trench to the UST cavity. Approximately 473 tons of contaminated soil was excavated, transported and disposed. A groundwater pump and treat system operated at the site from September 2004 through March 2010.

611 S. Irvine Avenue, Sharon, PA 16146
724.347.2101 phone 724.347.2139 fax

Impact to Soil

The extent of impact to soil includes an area of approximately 2,360 square feet around the dispenser islands between the Honey Bear Mini-Mart building and N. McKean Street. A map showing the extent of impact to soil is provided as Figure 2. The figure shows the estimated area of impacted soil in both the saturated and unsaturated zones.

The groundwater table fluctuates from approximately 12 feet to 18 feet below ground surface (bgs), resulting in a thick smear zone. The zone of impacted soil is approximately 7 to 8 feet thick and consists of clayey silty fine sand. The zone occurs from approximately 8 to 16 feet in the northern portion of the zone (near MW-1), 10 to 17 feet in the central portion of the zone, and 12 to 20 feet in the southern portion of the zone. The impacted zone is underlain by a layer of brown stiff clay. A layer of sand and gravel occurs beneath the clay.

Impact to Groundwater

Groundwater at the site flows southeast. A groundwater contour map is provided as Figure 3. Benzene, MTBE and naphthalene exceed the SHS in groundwater. The benzene plume is the most widespread of the contaminants and includes much of the Graft Oil property and the adjacent right-of-way of N. McKean Street. The aerial extent of the benzene plume is approximately 11,630 square feet. Benzene and MTBE isoconcentration maps are provided as Figures 4 and 5, respectively.

Chemistry of Klozur® Persulfate

Klozur was selected as the oxidant for use at the site because it provides a balance between powerful, fast acting oxidation and slow release oxidation. Klozur generates radicals that immediately oxidize contaminants, yet Klozur remains active in the subsurface for up to ten weeks. The immediate reaction with Klozur occurs over a period of days rather than hours and does not liberate excessive heat or cause off-gassing.

Klozur ($Na_2S_2O_8$) consists of stable, white crystals that are highly soluble (73%) in water. An activator is used to convert the persulfate anion (S_2O_8), a slow oxidant, into stronger and faster oxidants. Sodium hydroxide, chelated iron and hydrogen peroxide are three commonly used activators. IGI evaluated each of the activators and eliminated chelated iron based on cost, and hydrogen peroxide based on heat generation and off-gassing. Sodium hydroxide (NaOH) was therefore selected as the activator.

Persulfate reacts with sodium hydroxide to form sulfate radicals, sulfate ions and hydroxyl radicals. These radicals can directly attack and oxidize contaminants.

$$S_2O_8^{-2} + OH^{-1} \rightarrow SO_4\cdot^{-1} + SO_4^{-2} + OH\cdot$$

A Material Safety Data Sheet and Technical Bulletins provided by the manufacturer, FMC, are provided as Attachment A. The Technical Bulletins discuss corrosion and material compatibility, activators, injection concentrations and persulfate oxidation chemistry. Klozur appears to be compatible with subsurface materials such as tanks, piping and conduits.

Treatability Study

The dosing of Klozur is critical to ensuring maximum contaminant destruction while not over-applying the product. To determine the dosing rate, a treatability study was performed using soil samples collected from the source area. The results of the treatability study were discussed in detail in a letter to PADEP dated December 12, 2011. A summary is provided below.

The treatability study was designed to 1) determine if Klozur application was a viable technology for addressing soil and groundwater contamination at the site, and 2) determine the amounts of Klozur and activator necessary for optimal contaminant destruction.

The study concluded that a persulfate dose of 5 wt% provided greater contaminant reduction than 0.5 wt% or 2 wt%. Benzene is the chemical of concern in soil at this site and has been detected in soil at concentrations as high as 9.0 mg/kg. Using the mean destruction efficiencies observed in this study (99%), conservative benzene concentrations in soil following treatment were calculated to be 0.1 mg/kg.

The treatability study results indicated that application of Klozur at a dosage rate of 5 wt% could successfully address soil and groundwater impacts at the site, assuming that the subsurface distribution of Klozur is adequate. The anticipated reduction in mass in the saturated zone would then be expected to result in attenuation of the downgradient dissolved phase plume over time.

Pilot Study Design

The results of the treatability study were used to design a pilot study to evaluate the effectiveness of Klozur under actual site conditions. IGI designed the pilot study with the following objectives:

- Determine the capacity of the soil to receive injected fluid in the zone of impacted soil.
- Verify the radius of influence and vertical limits (target zone) for injection.
- Quantify the effectiveness of Klozur for soil and groundwater contaminants under field conditions.
- Monitor the impact of Klozur injection to groundwater. Analyze / measure pH, conductivity, sulfate, persulfate and sodium in existing monitoring wells and pilot test wells.

The area of the site having the highest contaminant concentrations in both soil and groundwater was selected as the location for the pilot test.

Post-injection groundwater monitoring was scheduled immediately following the injection and after 1 day, 3 days, 1 week, 2 weeks, 3 weeks, and 4 weeks. The schedule for testing was based on the reported reaction time for Klozur in the subsurface.

In addition to analyzing for unleaded gasoline parameters, IGI also proposed to monitor groundwater at the injection location and nearby wells for pH, conductivity, sodium and sulfate. Increases in pH, sodium concentration and conductivity were expected because sodium hydroxide was selected as the activator. Sulfate, a by-product of the Klozur reaction, was monitored to determine if concentrations would persist above secondary drinking water

standards at the property boundary. Because Klozur is a slow release product, an increasing trend in sulfate or sodium concentrations would have indicated that additional sampling events beyond four weeks were needed.

Pilot Study Implementation and Results

Drilling and Installation of Well Points

On June 4 – 7, 2012, drilling was completed to collect baseline soil samples and install pilot test wells and additional monitoring wells. One pilot test injection well (IP-1) was installed at the center of the pilot test area. The well is constructed of 1-inch diameter PVC with slotted screen from 10 to 18 feet bgs. Six 1-inch diameter pilot test observation wells were installed at 2 feet, 4 feet and 8 feet to the north and south of the injection well. The wells are identified as PT-2S, PT-4S, PT-8S, PT-2N, PT-4N and PT-8N. The well locations are shown on Figure 6. The locations of PT-2S, PT-4S and PT-8S were adjusted in the field from the original planned locations in order to avoid an active product line.

Two additional monitoring wells, MW-8 and MW-9, were installed immediately downgradient from the source area and adjacent to N. McKean Street. The purpose of these wells was twofold: 1) MW-8 and MW-9 provided for groundwater monitoring in the central portion of the groundwater plume near the property boundary, and both wells will likely serve as point-of-compliance wells in the future, and 2) MW-8, and to a lesser extent MW-9, served as pilot test observation wells at the property boundary downgradient of the pilot test injection location.

Baseline Soil Sampling

A total of 18 soil samples were collected from 8 soil borings and submitted for laboratory analysis of unleaded gasoline parameters by EPA Method 5035 / 8260B in order to establish baseline soil conditions within the pilot study area. Soil samples were screened using a photo ionization detector (PID). PID readings and observations were used to select multiple soils samples from the impacted zone in each boring. Generally, three soil samples were collected from the 10 to 17 foot bgs interval of each boring and submitted for laboratory analysis of gasoline parameters. Soil boring PT-2N yielded no recovery, therefore no soil samples from this boring were submitted for laboratory analysis. Analytical results obtained during the February 2011 soil investigation were also considered to be baseline conditions for the purpose of this pilot study. Soil boring locations are shown on Figure 7. The analytical results are summarized in Table 1.0. Soil boring logs / well construction diagrams are provided as Attachment B. Benzene exceeded the SHS in most of the soil samples, at a maximum concentration of 8.7 mg/kg.

Generally, soil contamination is present from 10 to 17 feet bgs in this area of the site. A layer of stiff brown clay having minimal petroleum impacts was encountered between 17 and 19 bgs in most of these borings. A layer of sand and gravel is present beneath the clay.

Baseline Groundwater Sampling

Depth to water measurements were recorded and groundwater samples collected on June 7, 2012, to establish baseline conditions prior to injection of Klozur. Samples were collected from

the pilot test injection well (IP-1), pilot test observation wells (PT-2S, PT-4S, PT-8S, PT-2N, PT-4N and PT-8N), selected monitoring wells (MW-1, MW-3, MW-4, MW-8 and MW-9), one extraction well (EW-2) and one injection well (IW-1). Groundwater samples were submitted for laboratory analysis of unleaded gasoline parameters by EPA Method 5030B / 8260B. The results are summarized in Table 2.0. The highest contaminant concentrations were observed in the pilot test wells located in the source area. Benzene, ethylbenzene, MTBE, naphthalene, toluene and total xylenes exceeded the SHS in many of the pilot test wells.

Baseline groundwater samples collected on June 7, 2012, were also analyzed in the field for pH, conductivity, sodium and sulfate. The results are summarized in Table 3.0. pH ranged from 5.84 to 6.89; conductivity ranged from 610 to 2,350 ppm; sodium ranged from 95 to 755 ppm, and sulfate ranged from 22 to 98 ppm.

Injection

The pilot injection was completed on June 8, 2012. A preliminary injection was completed over a 15-minute period using dechlorinated water to determine the optimal flow rate for injection. During the period, injection well IP-1 accepted approximately 1.3 gallons per minute (gpm) by gravity flow.

The Klozur solution was mixed in batches in a 275-gallon HDPE tank. The Klozur solution consisted of mixing 100 pounds of Klozur product in powder form and 14 gallons of sodium hydroxide (25%) with water to achieve a final volume of 100 gallons. Approximately 500 gallons of Klozur solution was injected into IP-1 over a four hour period. Initially, injection was accomplished by gravity flow. The final 50 gallons were injected under pressure to maximize distribution of the Klozur in the subsurface.

Post-injection Groundwater Monitoring

IGI monitored depth to water, pH, conductivity and sodium in the pilot test observation wells and other nearby wells during the injection, immediately following the injection, and after 1 day, 3 days, 1 week, 2 weeks, 3 weeks, 5 weeks and 8 weeks. Sulfate was also monitored at 2 weeks, 3 weeks and 5 weeks post-injection. The data are summarized in Table 3.0.

Groundwater Elevations

A substantial rise in groundwater elevation (as determined by depth to water measurements) was observed in PT-2S, PT-2N, PT-4N and PT-8N during the injection. The groundwater elevation rose approximately 7 feet in PT-2N, PT-4N, and PT-8N, and 3 feet in PT-2S. Little or no change was observed in PT-4S, PT-8S, MW-8 or EW-2. Based on changes in groundwater elevations, it appears that the majority of the injected product traveled northward in the direction of PT-2N, PT-4N, and PT-8N. Groundwater elevations gradually returned to normal over a period of approximately one week. Changes in groundwater elevations are shown graphically on Figure 8.

Sodium

Large increases in sodium concentrations were observed in PT-2N (from 243 to 17,501 ppm) and PT-4N (from 439 to 23,588 ppm) after the first 100 gallons of solution were injected, and in PT-8N (from 247 to 22,643 ppm) after the full injection of 500 gallons. The sodium concentration in these wells decreased approximately 50% within 24 hours after injection and continued to decrease gradually over the next 8 weeks.

Smaller increases in sodium concentrations were observed in PT-2S (138 to 286 ppm) and MW-8 (130 to 515 ppm) during injection. During the eight weeks following injection, the sodium concentration continued to increase in PT-2S to a maximum of 3,801 ppm. Sodium also increased in PT-4S (824 ppm at 5 weeks), MW-8 (937 ppm at 3 days), and IW-1 (858 ppm at 2 weeks).

The data provide direct evidence that a substantial volume of the injected Klozur solution, which contained a high concentration of sodium, reached PT-2N, PT-4N and PT-8N. In the days and weeks following the injection, the Klozur solution became diluted in groundwater and ultimately migrated southward and eastward toward PT-2S, PT-4S, MW-8 and possibly IW-1.

Changes in sodium concentrations are shown graphically on Figure 9.

Sulfate

Large increases in sulfate concentrations were observed in IP-1 (98 to 21,000 ppm), PT-2N (80 to 3,300 ppm), PT-4N (82 to 16,500 ppm), PT-8N (31 to 1,100 ppm) and PT-2S (22 to 4,000 ppm). Lesser increases were observed in PT-4S, PT-8S, EW-2, MW-8, MW-9 and MW-4. Sulfate concentrations in pilot test wells in the interior of the property exceeded the secondary drinking water standard (250 ppm). Sulfate concentrations remained below the secondary drinking water standard in all wells located at the property boundary or offsite (EW-2, IW-1, MW-8, MW-9, MW-3 and MW-4).

Gasoline Constituents

Groundwater samples were collected from the injection well and pilot test observation wells and submitted for laboratory analysis of unleaded gasoline parameters by EPA Method 5030B / 8260B at 3 days, 1 week, 2 weeks, 3 weeks and 5 weeks post-injection. The analytical results are summarized in Table 2.0. Changes in total contaminant concentrations in groundwater are shown graphically on Figure 10.

At 3 days post-injection, total contaminant concentrations decreased in IP-1 (89%), PT-2N (83%), PT-4N (81%), PT-8N (33%) and PT-2S (23%). Following this initial reduction, contaminant concentrations increased gradually throughout the 5 week monitoring period bringing the final contaminant reductions to 22% (IP-1), 72% (PT-2N), 61% (PT-4N), 5% (PT-8N). Following the initial reduction of 23% in PT-2S, contaminant concentrations remained relatively stable, and the final contaminant reduction was 24%. Contaminant concentrations in PT-4S and PT-8S increased initially but then decreased throughout the 5 week monitoring period ultimately returning to baseline conditions.

The wells showing reductions in contaminant concentrations in groundwater are the same wells that were directly affected by the Klozur solution (based on the observed rise in groundwater elevation and a large increase in sodium concentrations).

Post-injection Soil Sampling

On June 10, 2012, approximately 4½ weeks after Klozur injection, drilling was completed to collect post-injection soil samples. A total of 26 soil samples were collected from 11 soil borings and submitted for laboratory analysis of unleaded gasoline parameters by EPA Method 5035 / 8260B. Each post-injection soil boring was located adjacent to a baseline soil boring, and soil samples were collected from intervals corresponding with the adjacent baseline soil boring in order to compare baseline soil conditions with post-injection soil conditions. The analytical results are summarized in Table 1.0. Soil boring logs are provided as Attachment C.
A comparison of benzene concentrations in soil before and after Klozur injection is provided in Table 4.0. The soil samples collected from the two borings (SB-1S and SB-1N) nearest the injection location (IP-1) showed consistent reductions in benzene concentrations. Reductions of 80% and 86% were observed in the deeper zone (15 – 17.5 feet), and reductions of 16% and 37% were observed in the shallower zone (10 – 12.5 feet). At more distal locations, both increases and decreases in benzene concentrations were observed with no discernible trend or pattern.

Contaminant Destruction Calculations

The total contaminant mass destroyed through Klozur injection was calculated for both soil and groundwater. Contaminant destruction in soil occurred within a 1 foot radius around IP-1 (3.14 square feet). Baseline contaminant mass was calculated using soil analytical results for IP-1 between 10 and 13.5 feet and between 13.5 and 17 feet. Post-injection contaminant mass was calculated using soil analytical results for SB-1N and SB-1S between 10 and 13.5 feet and between 13.5 and 17 feet. Baseline and post-injection contaminant mass in the 10-13.5 foot zone is calculated to be 0.56 pounds and 0.54 pounds, respectively, yielding a contaminant mass destruction of 0.02 pounds. Baseline and post-injection contaminant mass in the 13.5-17 foot zone is calculated to be 0.48 pounds and 0.13 pounds, respectively, yielding a contaminant mass destruction of 0.35 pounds. Therefore, the total contaminant mass destroyed in soil is 0.37 pounds. The calculations are provided in Table 5.0.

Contaminant destruction in groundwater occurred within 8 feet to the north and 2 feet to the south of IP-1. The average radius of influence is 5 feet, and the area is 78.5 square feet. Baseline and post-injection contaminant mass was calculated using groundwater analytical results for IP-1, PT-2N, PT-4N, PT-8N and PT-2S from June 7, 2012 (baseline) and July 13, 2012 (post-injection). Baseline and post-injection contaminant mass in groundwater is calculated to be 0.16 pounds and 0.082 pounds, respectively, yielding a contaminant mass destruction of 0.078 pounds. The calculations are provided in Table 6.0.

Injection of 500 pounds of Klozur destroyed a total of 0.448 pounds of contaminants. A summary of total contaminant mass destruction is provided in Table 7.0.

Revised Contaminant Mass Estimates

Contaminant mass estimates were revised to take into account recent soil and groundwater analytical results. Estimates of contaminant mass within the area of impact shown on Figure 2 were calculated based on the total concentration of gasoline analytes. Approximately 8.2 to 32.9 pounds occur in the unsaturated zone and 184 to 737 pounds, in the saturated zone. The estimated contaminant mass in groundwater is 1.7 pounds. Groundwater contaminant mass is approximately 0.2 to 1 percent of the total mass. Additional soil mass is present outside the area of impact shown on Figure 2 where contaminants were detected at concentrations less than the SHS. The estimated contaminant mass in this "non-impacted" zone is 7.7 to 270 pounds. The basis of the mass calculations for soil and groundwater are shown in Tables 8.0 and 9.0, respectively.

Summary of Pilot Test Results

- Soil in the target zone accepted injected fluids at an average rate of approximately 2 gpm.
- The radius of influence was not uniform surrounding the injection well, likely due to the heterogeneous nature of the subsurface. The radius of influence to the north extended at least 8 feet, while the radius of influence to the south extended only 2 feet.
- Klozur injection appears to have reduced contaminant concentrations up to 86% in soil, but only in a very limited area (approximately 1 foot radius) around the injection well, and contaminant concentrations continue to exceed the SHS.
- Klozur injection reduced contaminant concentrations in groundwater. The greatest reductions were observed at the injection location (89%) and at 2 feet (83%) and 4 feet (81%) north of the injection location. Lesser reductions were observed 8 feet north (33%) and 2 feet south (23%) of the injection location. However, contaminant concentrations continue to exceed the SHS.
- Contaminant reductions in groundwater were temporary because high adsorbed phase contaminant concentrations remain in soil. Following an initial reduction in contaminant concentrations in groundwater, concentrations in groundwater gradually increased returning to an equilibrium state between the dissolved phase and adsorbed phase.
- Injection of 500 pounds of Klozur destroyed a total of 0.448 pounds of contaminants.
- Concentrations of sulfate, a daughter product of Klozur, did not exceed the secondary drinking water standard (250 ppm) at the property boundary or offsite. Sulfate concentrations did exceed the secondary drinking water standard on the property at a maximum of 8 feet (PT-8N) from the injection location.
- Between 202 and 1,042 pounds of gasoline constituents are present in soil and groundwater at the site.

Application to Full Scale Implementation

Based on the pilot test results and contaminant destruction calculations, an estimated 1,116 pounds of Klozur would be required to destroy 1 pound of gasoline constituents. Revised contaminant mass estimates indicate that approximately 202 to 1,042 pounds of gasoline contaminants are present at the site. Using this data, the total amount of Klozur required for successful full scale treatment of the site is calculated to be between 224,700 and 1,161,600 pounds. The amount of activator (sodium hydroxide) is calculated to be between 31,500 and 162,600 gallons. Klozur calculations for full scale implementation are summarized in Table 10.0.

The radius of influence for contaminant destruction in soil was approximately 1 foot. In order to fully address the area of impact to soil (2,360 square feet), approximately 600 injection locations would be required, and the amount of Klozur per point ranges from approximately 400 to 1,900 pounds.

Full scale implementation, as described above, presents the following challenges:

- The cost for Klozur powder and sodium hydroxide activator would be between $740,000 and $3,800,000.
- The large volume (224,700 to 1,161,600 gallons) of product to be injected would result in widespread mounding of the groundwater table and expand the plume.
- Although concentrations of sulfate, a daughter product of Klozur, remained below secondary drinking water standards at the property boundary during the pilot test, it is likely that sulfate would exceed secondary drinking water standards at the property boundary during full scale implementation.

Conclusions

During the pilot test, Klozur injection showed limited success in destroying gasoline contaminants in both soil and groundwater at the site. Full scale implementation of Klozur injection is not practical due to the large volumes of Klozur product and numerous injection locations required to successfully address both soil and groundwater contamination at the site.

If you have any questions or comments, please feel free to contact me.

Respectfully,

Sara Giordano

Sara Giordano, PhD
Project Coordinator

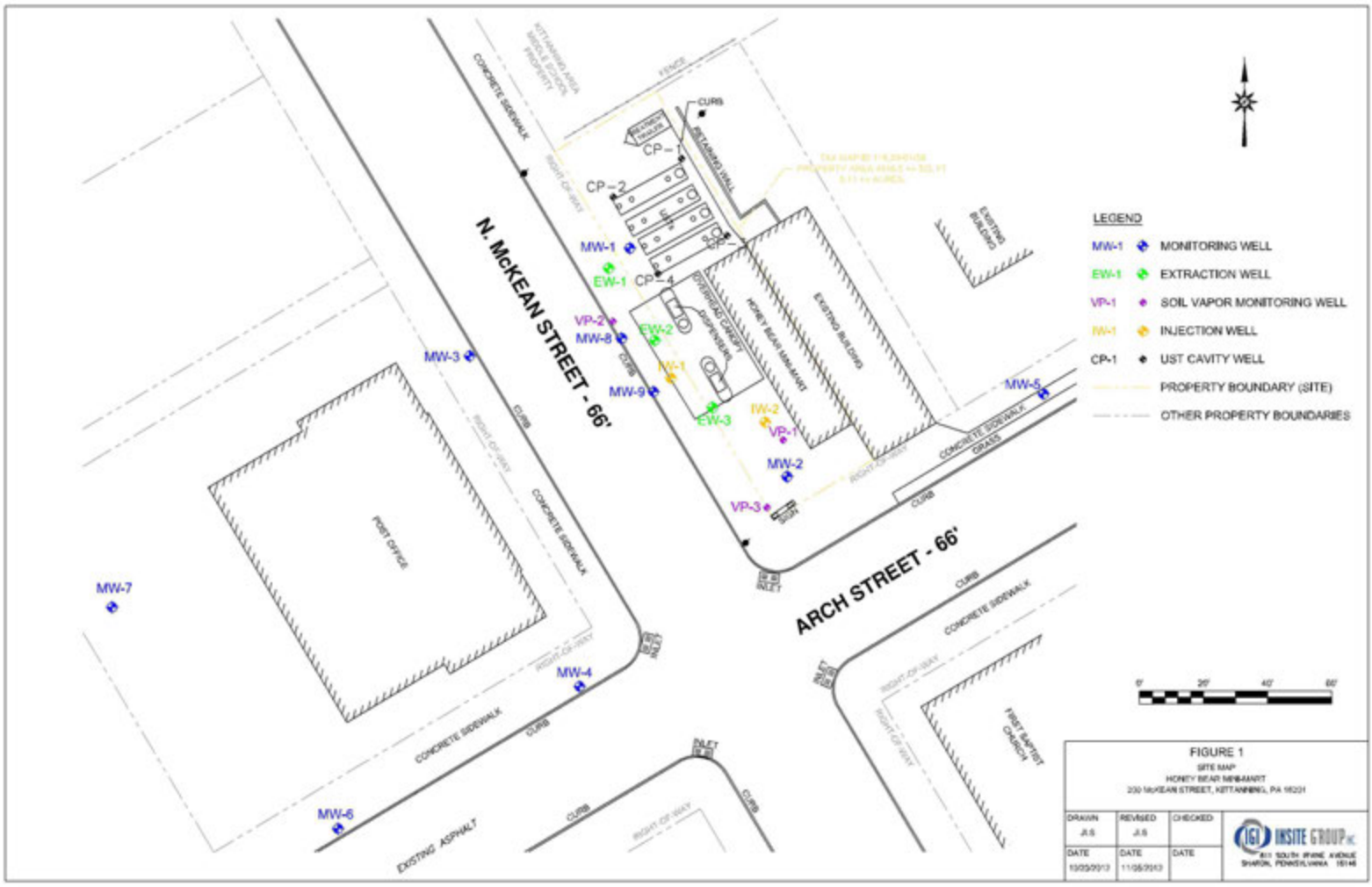


FIGURE 1

SITE MAP

HONEY BEAR MINIMART

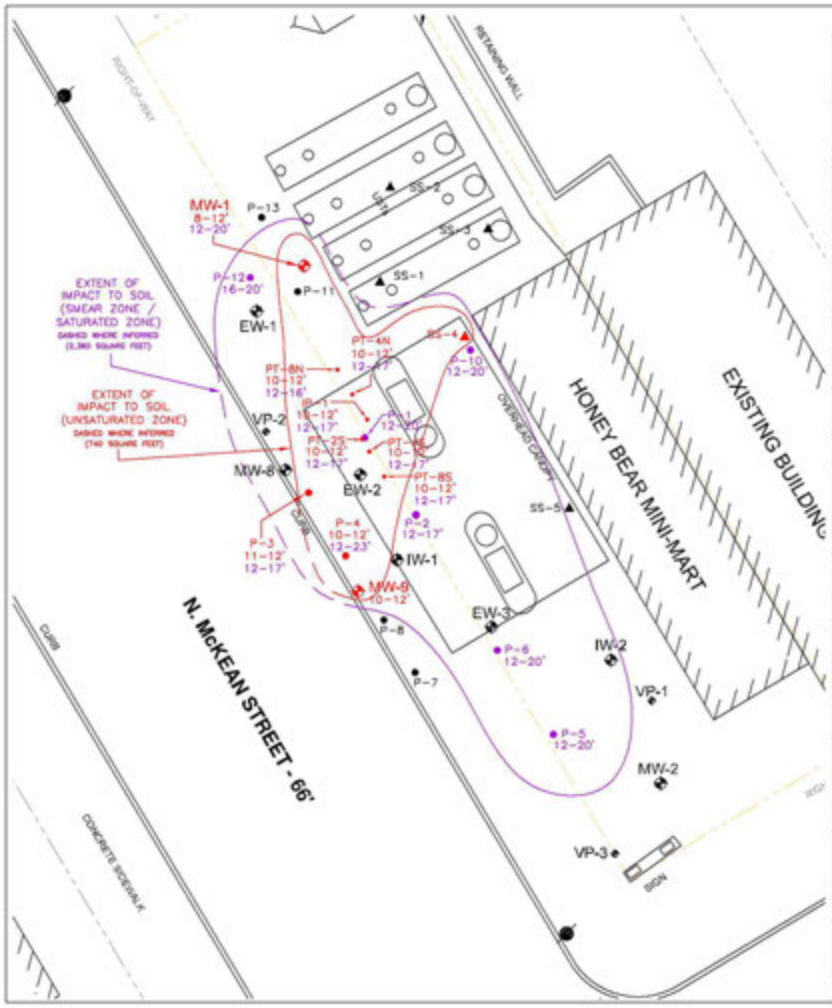
230 McKEAN STREET, KITTANNING, PA 16201

DRAWN	REVISED	CHECKED	
JLS	JLS		
DATE	DATE	DATE	
10/03/2013	11/06/2013		

INSITE GROUP PC

811 SOUTH IRVINE AVENUE

SHARON, PENNSYLVANIA 16146



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	04/19/02	12 - 14	5.4	2[illegible]
	04/19/02	14 - 16	7.[illegible]	15[illegible]
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[illegible]2[illegible]	07/05/02	8 - 10	0.18	0.57
M[illegible]3	04/15/04	10 - 12	0.017	0.017
	04/15/04	14 - 16	0.34	0.5[illegible]
M[illegible]4	04/15/04	10 - 12	<0.0012	0
M[illegible]5	04/15/04	10 - 12	<0.0011	0
[illegible]1	02/08/11	8 - 12	0.018	0.47
	02/08/11	12 - 16	[illegible].0	[illegible]95
	02/08/11	20 - 20.5	1.7	2[illegible]
[illegible]2	02/08/11	8 - 12	0.010	0.01[illegible]
	02/08/11	16 - 20	2.[illegible]	8[illegible]
[illegible]3	02/10/11	11 - 12	0.[illegible]	83
	02/10/11	16 - 17.5	0.[illegible]8	78
	02/10/11	19.5 - 20	<0.0055	0
[illegible]4	02/09/11	10 - 12	0.[illegible]4	1.5
	02/09/11	16 - 18	0.47	1.8
	02/09/11	20 - 23	5.4	247
[illegible]5	02/08/11	10 - 12	0.0026	0.0088
	02/08/11	12 - 16	2.0	154
	02/08/11	20 - 21	0.33	2.[illegible]
	02/08/11	21 - 22	<0.0011	0.005[illegible]
[illegible]	02/09/11	12 - 14	1.2	2[illegible]
	02/09/11	20 - 24	0.0011	0.0011
[illegible]7	02/10/11	10 - 12	<0.0060	0
	02/10/11	12 - 16	0.15	5.5
	02/10/11	17.5 - 19.5	<0.0061	0
[illegible]8	02/10/11	10 - 12	<0.0060	0
	02/10/11	12 - 16	0.25	20
[illegible]10	02/09/11	8 - 12	<0.18	10
	02/09/11	12 - 16	1.2	41
[illegible]11	02/09/11	16 - 20	<1.5	134
	02/09/11	20 - 23	<0.71	78
[illegible]12	02/08/11	10 - 12	<0.41	1[illegible]
	02/08/11	12 - 16	<0.43	[illegible]
[illegible]13	02/09/11	8 - 12	0.071	25
	02/09/11	15 - 16	<0.044	5.[illegible]
[illegible]8[illegible]	06/05/12	10 - 12.5	2.4	188
	06/05/12	12.5 - 15	[illegible].4	248
	06/06/12	15 - 16	0.58	7[illegible]
[illegible]4[illegible]	06/06/12	10 - 11.5	4.7	15[illegible]
	06/06/12	15 - 16	0.83	17
[illegible]1	06/05/12	10 - 12.7	1.[illegible]	422
	06/05/12	15 - 17.5	0.7	3.8
[illegible]2[illegible]	06/05/12	10 - 12	2.2	74
	06/05/12	12 - 14	4.2	551
	06/05/12	15 - 17	0.5	30[illegible]
[illegible]8[illegible]	06/05/12	10 - 12.5	3.3	102
	06/05/12	12.5 - 15	5.2	7[illegible]9
	06/05/12	15 - 17	2.0	37
[illegible]8[illegible]	06/05/12	10 - 10.5	0.35	10
	06/05/12	12.5 - 15	0.26	2[illegible]
	06/05/12	15 - 17	0.52	120
M[illegible]9	06/06/12	10 - 13.3	<0.17	28
M[illegible][illegible]	06/07/12	10 - 12.8	0.78	1.0

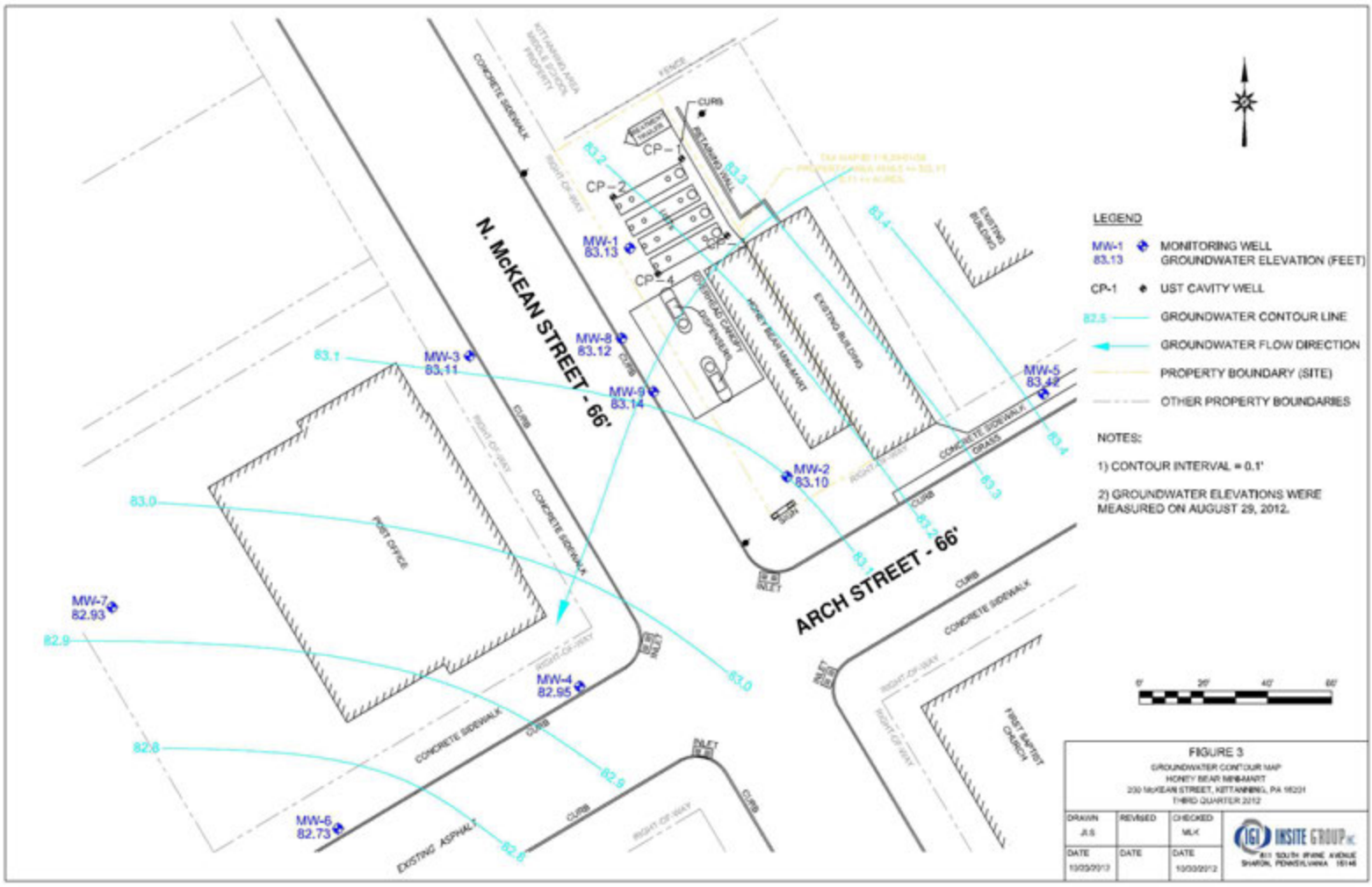
LEGEND

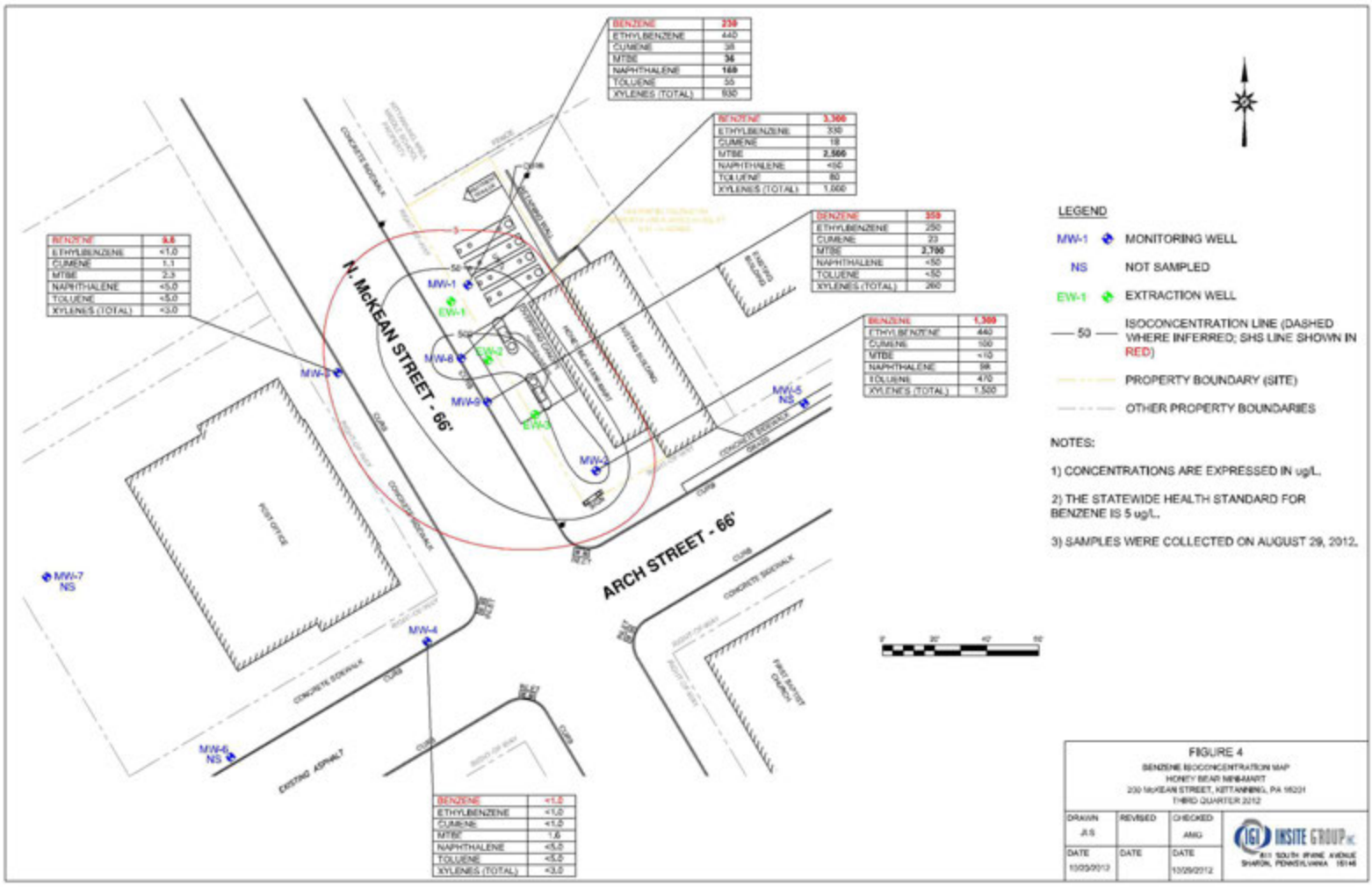
- P–1 • SOIL BORING
- 10–12' DEPTH OF SOIL EXCEEDING SHS IN THE UNSATURATED ZONE
- 12–20' DEPTH OF SOIL EXCEEDING SHS IN THE SMEAR ZONE / SATURATED ZONE
- MW-1 MONITORING WELL
- EW-1 EXTRACTION WELL
- VP-1 SOIL VAPOR MONITORING WELL
- IW-1 INJECTION WELL
- PROPERTY BOUNDARY (SITE)
- OTHER PROPERTY BOUNDARIES

FIGURE 2

EXTENT OF IMPACT TO SOIL
HONEY BEAR MINI-MART
230 McKEAN STREET, KITTANNING, PA 16201

DRAWN	REVISED	CHECKED	INSITE GROUP, IC. 811 SOUTH IRVINE AVENUE SHARON, PENNSYLVANIA 16146
AS			
DATE 10/29/2013	DATE	DATE	


N. McKEAN STREET - 66'
ARCH STREET - 66'
MW-1 83.13
MW-2 83.10
MW-3 83.11
MW-4 82.95
MW-5 83.42
MW-6 82.73
MW-7 82.93
MW-8 83.12
MW-9 83.14
CP-1
CP-2
CP-3
CP-4
83.0
83.1
83.2
83.3
83.4
82.9
82.8
82.5
POST OFFICE
HONEY BEAR MINI-MART
EXISTING BUILDING
FIRST BAPTIST CHURCH
CONCRETE SIDEWALK
EXISTING ASPHALT
RIGHT-OF-WAY
CURB
INLET
GRASS
FENCE
LEGEND
MW-1 83.13 MONITORING WELL GROUNDWATER ELEVATION (FEET)
CP-1 UST CAVITY WELL
82.5 GROUNDWATER CONTOUR LINE
GROUNDWATER FLOW DIRECTION
PROPERTY BOUNDARY (SITE)
OTHER PROPERTY BOUNDARIES
NOTES:
1) CONTOUR INTERVAL = 0.1'
2) GROUNDWATER ELEVATIONS WERE MEASURED ON AUGUST 29, 2012.
0' 20' 40' 80'
FIGURE 3
GROUNDWATER CONTOUR MAP
HONEY BEAR MINI-MART
230 McKEAN STREET, KITTANNING, PA 16201
THIRD QUARTER 2012
DRAWN JLS
REVISED
CHECKED MLK
DATE 10/03/2012
DATE
DATE 10/03/2012
INSITE GROUP PC
811 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146



LEGEND

MW-1 MONITORING WELL

NS NOT SAMPLED

EW-1 EXTRACTION WELL

—— 50 —— ISOCONCENTRATION LINE (DASHED WHERE INFERRED; SHS LINE SHOWN IN RED)

PROPERTY BOUNDARY (SITE)

OTHER PROPERTY BOUNDARIES

NOTES:

1) CONCENTRATIONS ARE EXPRESSED IN ug/L.

2) THE STATEWIDE HEALTH STANDARD FOR BENZENE IS 5 ug/L.

3) SAMPLES WERE COLLECTED ON AUGUST 29, 2012.

FIGURE 4

BENZENE ISOCONCENTRATION MAP

HONEY BEAR MINI-MART

230 McKEAN STREET, KITTANNING, PA 16201

THIRD QUARTER 2012

DRAWN	REVISED	CHECKED
AS		AMG
DATE 10/03/2012	DATE	DATE 10/29/2012

INSITE GROUP, IC
811 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

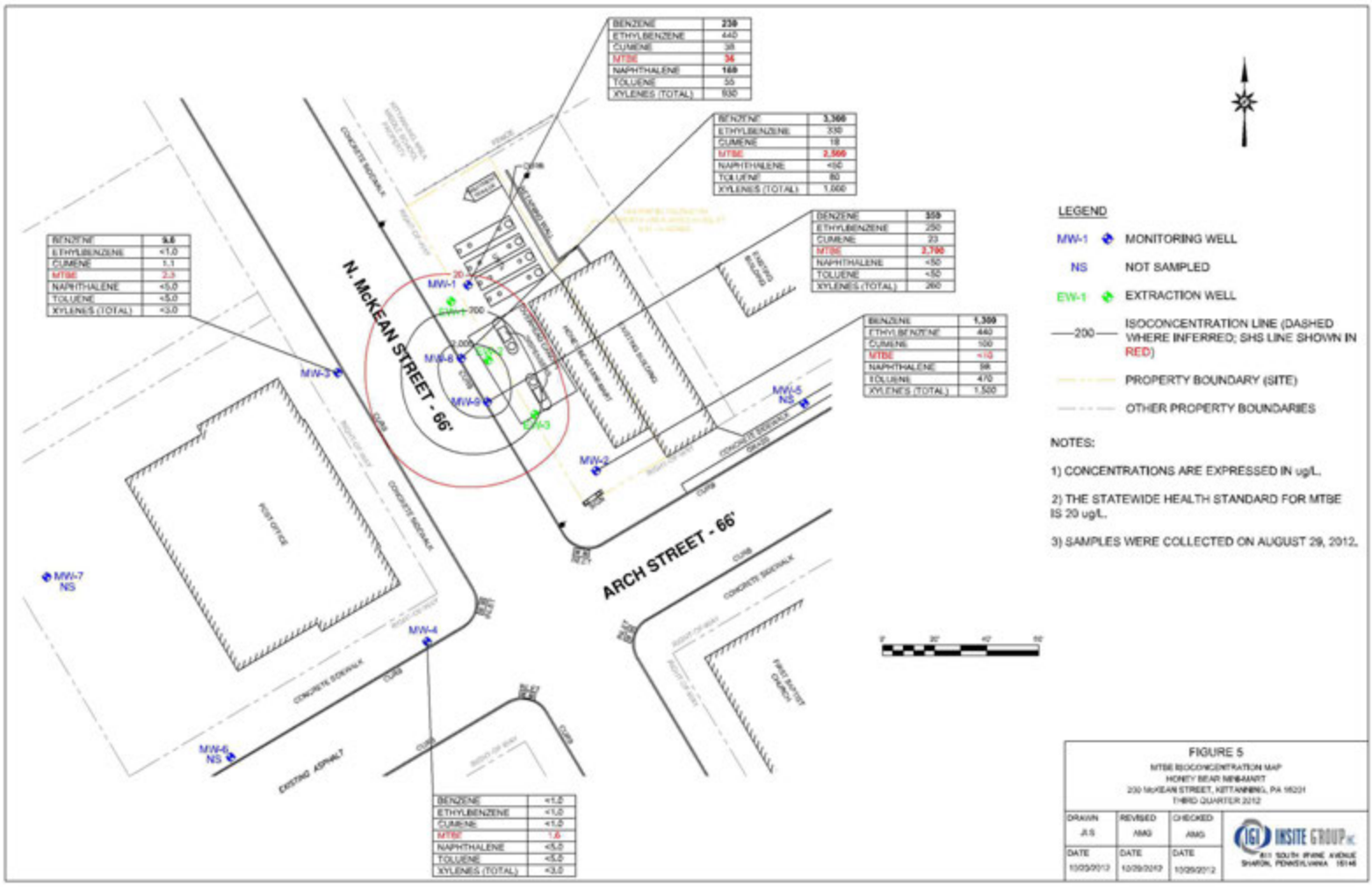


FIGURE 5
MTBE ISOCONCENTRATION MAP
HONEY BEAR MINI-MART
230 McKEAN STREET, KITTANNING, PA 16201
THIRD QUARTER 2012

DRAWN	REVISED	CHECKED
JLS	AMG	AMG
DATE	DATE	DATE
10/03/2012	10/29/2012	10/29/2012

INSITE GROUP, IC
811 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

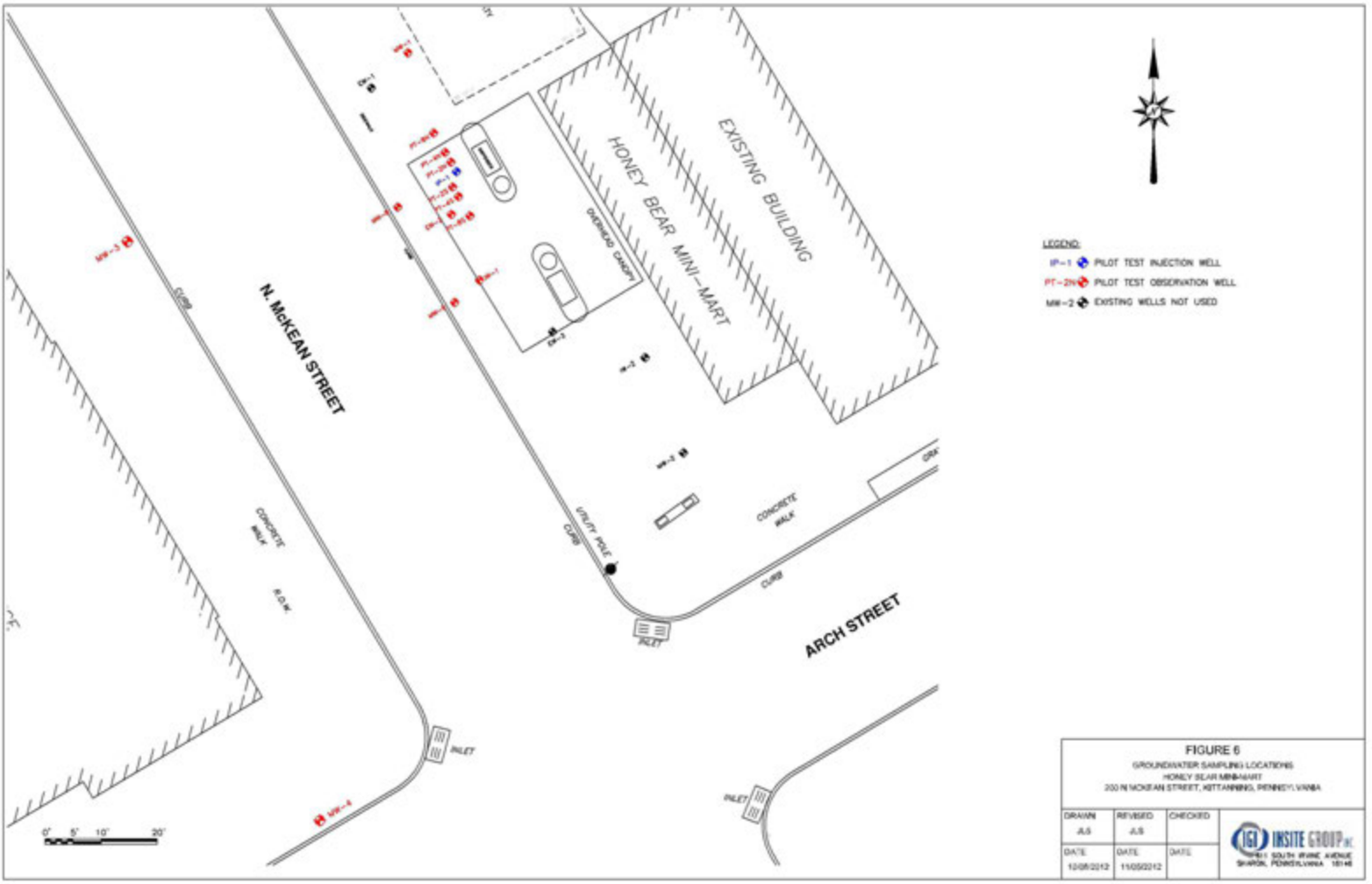


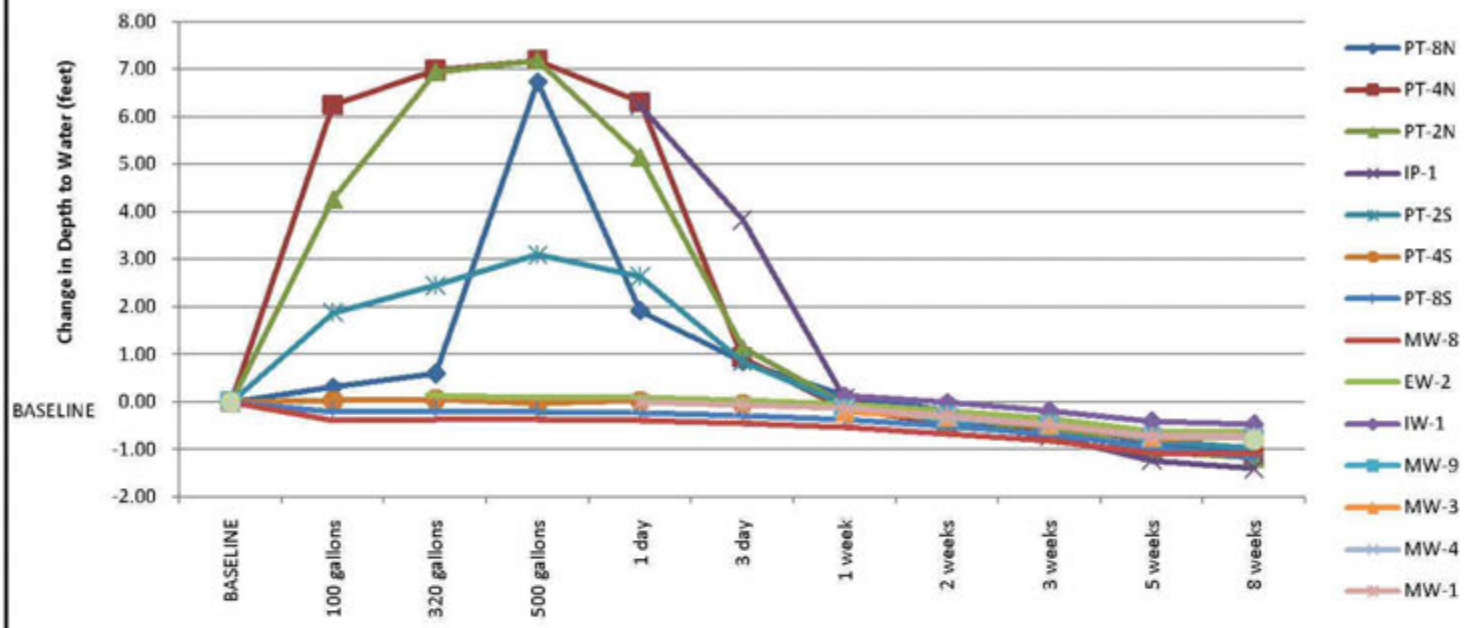
FIGURE 6

GROUNDWATER SAMPLING LOCATIONS
HONEY BEAR MINI-MART
200 N McKEAN STREET, KITTANNING, PENNSYLVANIA

DRAWN	REVISED	CHECKED
AS	AS	
DATE	DATE	DATE
10/08/2012	11/05/2012	

INSITE GROUP INC
1961 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

LEGEND:
PT-2N BASELINE SOIL SAMPLING LOCATION AND PILOT TEST WELL
P-1 BASELINE SOIL SAMPLING LOCATION
P-1A POST INJECTION SOIL SAMPLING
MW-2 EXISTING WELL
MW-1
EW-1
MW-8
EW-2
IW-1
EW-3
MW-9
SIDEWALK
CURB
DISPENSER
HONEY
OVERHEAD CANOPY
KEAN STREET
0' 5' 10' 20'
FIGURE 7
SOIL SAMPLING LOCATIONS
HONEY BEAR MINI-MART
200 N McKEAN STREET, KITTANNING, PENNSYLVANIA
DRAWN JLS
REVISED JLS
CHECKED
DATE 10/08/2012
DATE 11/07/2012
DATE
INSITE GROUP INC.



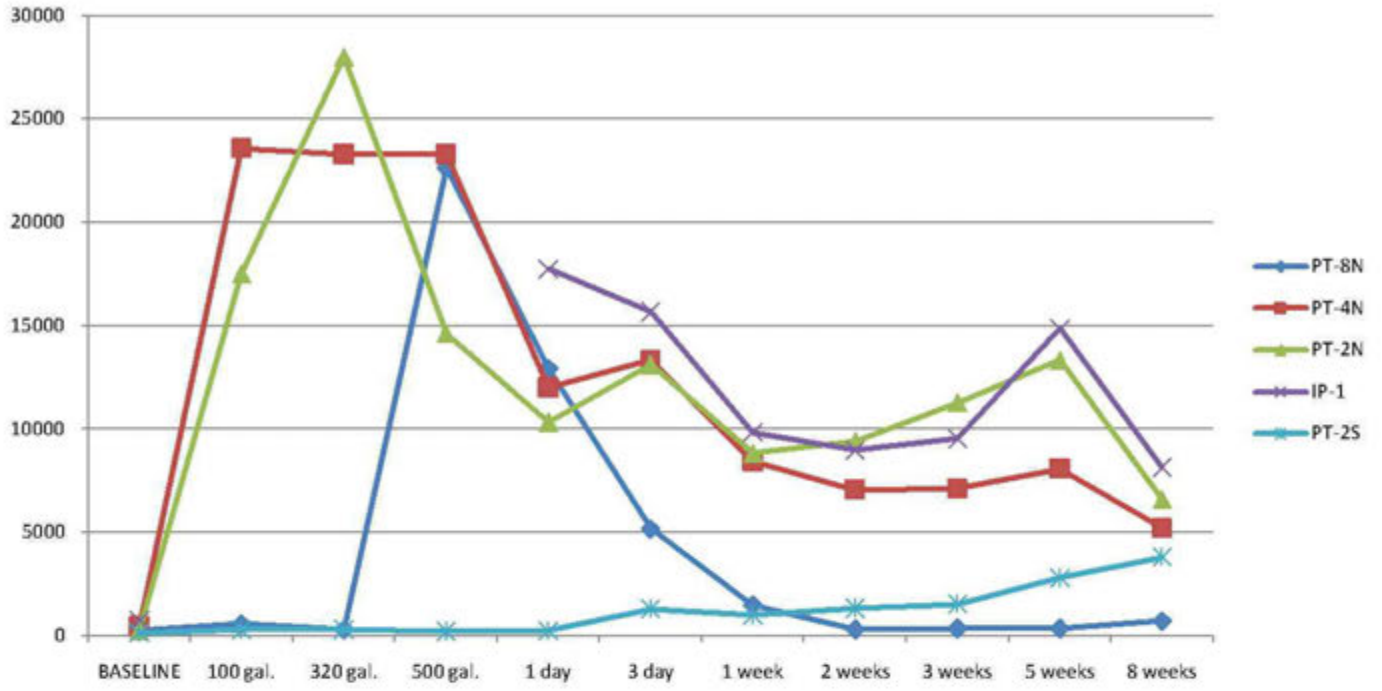
Time Post-Injection	Depth to Water														
	PT-8N	PT-4N	PT-2N	IP-1	PT-2S	PT-4S	PT-8S	MW-8	EW-2	IW-1	MW-9	MW-3	MW-4	MW-1	MW-2
BASELINE	15.41	14.81	14.65	14.50	14.74	16.87	16.63	15.60	16.38	16.68	16.04	15.26	15.94	16.17	16.83
100 gallons	15.10	8.56	10.38		12.86	16.84	16.83	15.98							
320 gallons	14.81	7.83	7.70		12.29	16.81	16.81	15.97	16.25						
500 gallons	8.68	7.62	7.46		11.64	16.90	16.83	15.96	16.28						
1 day	13.49	8.50	9.49	8.26	12.10	16.84	16.86	15.98	16.29					16.18	
3 day	14.56	13.88	13.51	10.67	13.89	16.91	16.92	16.05	16.35					16.24	
1 week	15.28	14.95	14.70	14.42	14.78	16.97	17.00	16.12	16.42	16.55	16.21	15.47	16.05	16.30	
2 weeks	15.60	15.26	15.06	14.94	15.17	17.19	17.14	16.27	16.56	16.69	16.35	15.58	16.27	16.46	
3 weeks	15.80	15.34	15.16	15.21	15.17	17.35	17.30	16.42	16.73	16.86	16.53	15.74	16.41	16.63	
5 weeks	16.30	15.86	15.68	15.73	15.55	17.67	17.59	16.68	16.99	17.09	16.79	16.00	16.67	16.89	
8 weeks	16.45	15.96	15.83	15.90	15.72	17.59	17.80	16.70	17.01	17.14	16.80	16.01	16.66	16.89	17.62

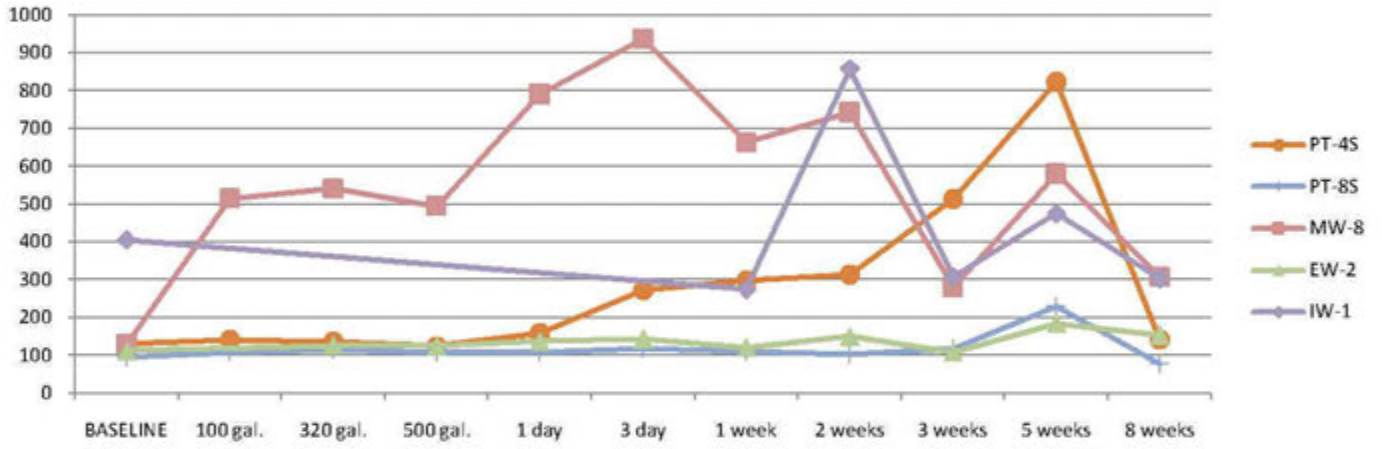
Time Post-Injection	Change in Depth to Water as Compared to Baseline														
	PT-8N	PT-4N	PT-2N	IP-1	PT-2S	PT-4S	PT-8S	MW-8	EW-2	IW-1	MW-9	MW-3	MW-4	MW-1	MW-2
BASELINE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100 gallons	0.31	6.25	4.27		1.88	0.03	-0.20	-0.38							
320 gallons	0.60	6.98	6.95		2.45	0.06	-0.18	-0.37	0.13						
500 gallons	6.73	7.19	7.19		3.10	-0.03	-0.20	-0.36	0.10						
1 day	1.92	6.31	5.16	6.24	2.64	0.03	-0.23	-0.38	0.09					-0.01	
3 day	0.85	0.93	1.14	3.83	0.85	-0.04	-0.29	-0.45	0.03					-0.07	
1 week	0.13	-0.14	-0.05	0.08	-0.04	-0.10	-0.37	-0.52	-0.04	0.13	-0.17	-0.21	-0.11	-0.13	
2 weeks	-0.19	-0.45	-0.41	-0.44	-0.43	-0.32	-0.51	-0.67	-0.18	-0.01	-0.31	-0.32	-0.33	-0.29	
3 weeks	-0.39	-0.53	-0.51	-0.71	-0.43	-0.48	-0.67	-0.82	-0.35	-0.18	-0.49	-0.48	-0.47	-0.46	
5 weeks	-0.89	-1.05	-1.03	-1.23	-0.81	-0.80	-0.96	-1.08	-0.61	-0.41	-0.75	-0.74	-0.73	-0.72	
8 weeks	-1.04	-1.15	-1.18	-1.40	-0.98	-0.72	-1.17	-1.10	-0.63	-0.46	-0.76	-0.75	-0.72	-0.72	-0.79

TABLE LEGEND: RISE IN WATER TABLE ... FALL IN WATER TABLE

INSITE GROUP INC.
611 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

FIGURE 8
CHANGES IN **DEPTH TO WATER** AFTER KLOZUR INJECTION
HONEY BEAR MINI-MART
200 N MCKEAN STREET, KITTANNING, PA 16201



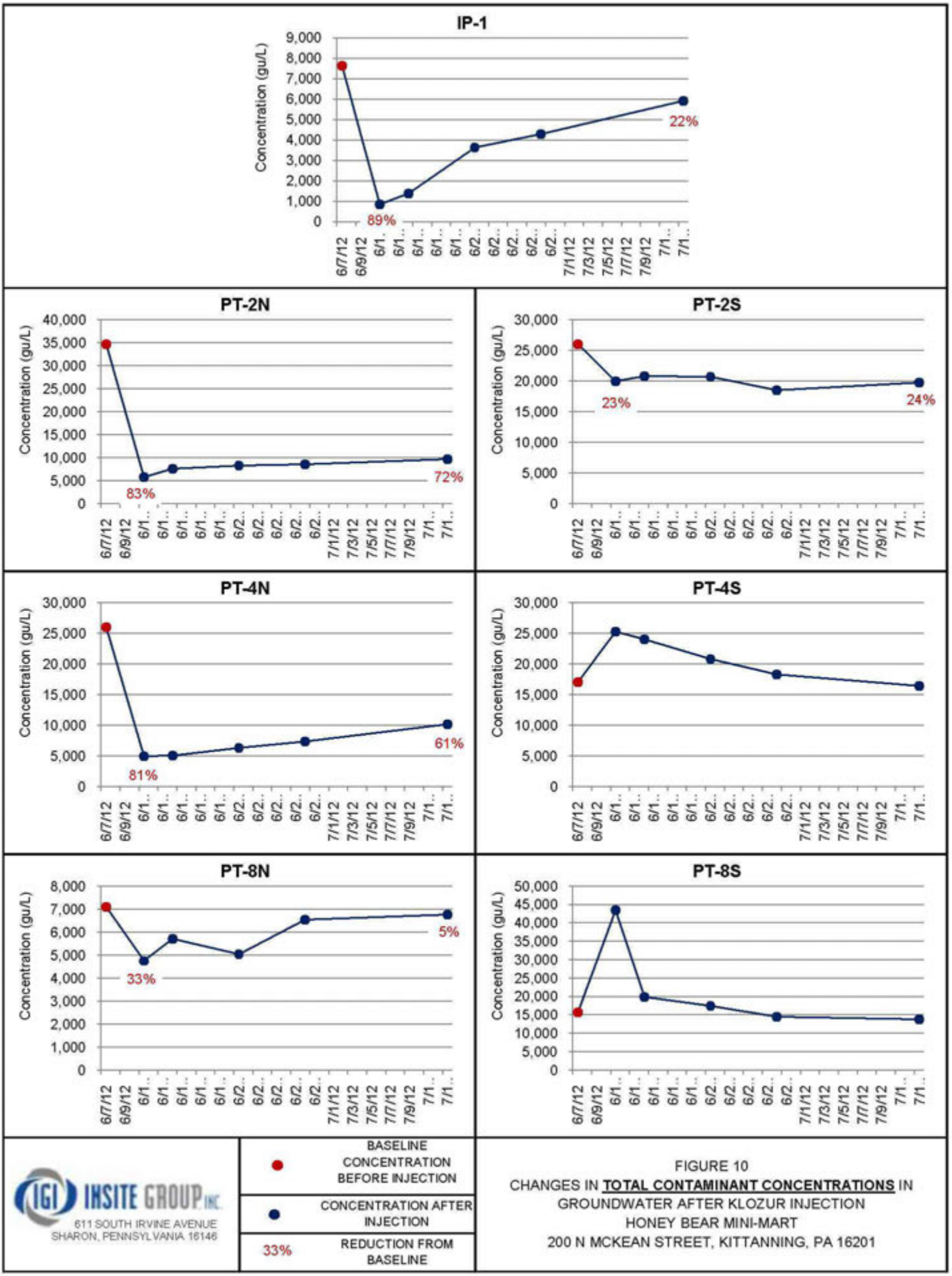


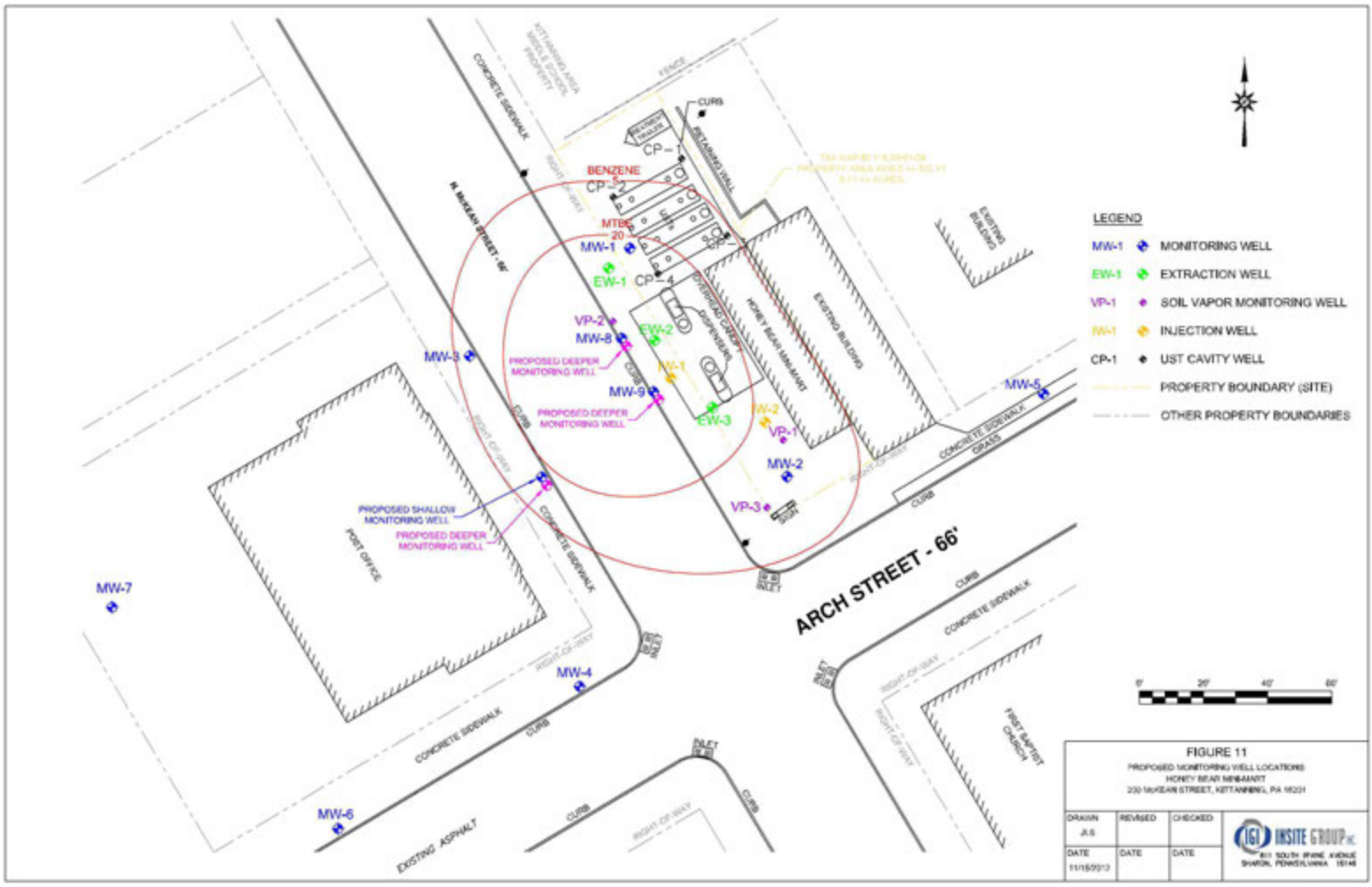
Time Post-Injection	Sodium (ppm)														
	PT-8N	PT-4N	PT-2N	IP-1	PT-2S	PT-4S	PT-8S	MW-8	EW-2	IW-1	MW-9	MW-3	MW-4	MW-1	MW-2
BASELINE	247	439	243	755	138	130	95	130	112	406	154	315	393		
100 gal.	573	23,588	17,501		286	142	109	515							
320 gal.	292	23,301	28,008		299	137	115	541	127						
500 gal.	22,643	23,301	14,620		214	125	107	495	125					202	
1 day	12,928	12,015	10,337	17,752	243	160	107	791	138					190	
3 day	5,170	13,332	13,117	15,683	1,303	273	117	937	144					203	
1 week	1,459	8,438	8,832	9,838	1,008	298	110	663	122	275	143	233	373	138	
2 weeks	314	7,059	9,410	8,970	1,320	314	103	743	150	858	224	507	483	507	
3 weeks	355	7,112	11,288	9,528	1,533	514	117	280	109	308	145	253	268	165	
5 weeks	358	8,080	13,336	14,873	2,791	824	229	580	185	475	269	409	444	273	
8 weeks	702	5,217	6,608	8,162	3,801	142	77	308	154	304	194		290	439	202

TABLE LEGEND: High Sodium ... Lowh Sodium

INSITE GROUP, INC.
611 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

FIGURE 9
CHANGES IN **SODIUM** CONCENTRATIONS IN GROUNDWATER AFTER KLOZUR INJECTION
HONEY BEAR MINI-MART
200 N MCKEAN STREET, KITTANNING, PA 16201


IP-1
Concentration (gu/L)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
89%
22%
6/7/12
6/9/12
7/1/12
7/3/12
7/5/12
7/7/12
7/9/12
PT-2N
Concentration (gu/L)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
83%
72%
PT-2S
Concentration (gu/L)
30,000
25,000
20,000
15,000
10,000
5,000
0
23%
24%
PT-4N
Concentration (gu/L)
30,000
25,000
20,000
15,000
10,000
5,000
0
81%
61%
PT-4S
Concentration (gu/L)
30,000
25,000
20,000
15,000
10,000
5,000
0
PT-8N
Concentration (gu/L)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
33%
5%
PT-8S
Concentration (gu/L)
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
BASELINE CONCENTRATION BEFORE INJECTION
CONCENTRATION AFTER INJECTION
33%
REDUCTION FROM BASELINE
IGI INSITE GROUP INC.
611 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146
FIGURE 10
CHANGES IN TOTAL CONTAMINANT CONCENTRATIONS IN GROUNDWATER AFTER KLOZUR INJECTION
HONEY BEAR MINI-MART
200 N MCKEAN STREET, KITTANNING, PA 16201


LEGEND
MW-1 MONITORING WELL
EW-1 EXTRACTION WELL
VP-1 SOIL VAPOR MONITORING WELL
IW-1 INJECTION WELL
CP-1 UST CAVITY WELL
PROPERTY BOUNDARY (SITE)
OTHER PROPERTY BOUNDARIES
ARCH STREET - 66'
H. McKEAN STREET - 66'
CONCRETE SIDEWALK
CURB
RIGHT-OF-WAY
FENCE
BENZENE
MTBE
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
EW-1
EW-2
EW-3
IW-1
IW-2
VP-1
VP-2
VP-3
CP-1
CP-2
CP-4
PROPOSED DEEPER MONITORING WELL
PROPOSED SHALLOW MONITORING WELL
POST OFFICE
EXISTING ASPHALT
HONEY BEAR MINI-MART
EXISTING BUILDING
FIRST BAPTIST CHURCH
INLET
GRASS
0' 20' 40' 60'
FIGURE 11
PROPOSED MONITORING WELL LOCATIONS
HONEY BEAR MINI-MART
230 McKEAN STREET, KITTANNING, PA 16201
DRAWN
REVISED
CHECKED
DATE
DATE
DATE
INSITE GROUP INC
611 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 15146

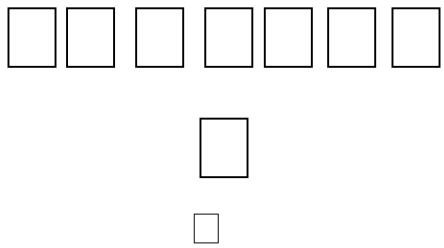


Table 1.0: Soil Analytical Results Before and After Klozur Injection

Sample ID	Date	Depth	Chemicals of Concern (mg/kg)							TOTAL COCs (mg/kg)	PID Reading (ppm)
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)		
Statewide Health Standard, Soil to GW, Residential, Used Aquifer			*0.5*	*70*	*600*	*2*	*25*	*100*	*1,000*	--	--
BASELINE (BEFORE KLOZUR INJECTION)											
P-1	02/08/11	8 - 12	0.018	0.14	0.032	<0.0012	0.076	0.0097	0.30	--	132
	02/08/11	12 - 16	**9.0**	**89**	8.5	<1.3	22	37	470	--	260
	02/08/11	20 - 20.5	**1.7**	4.6	0.76	0.14	2.3	0.41	22	--	>2000
P-2	02/08/11	8 - 12	0.010	0.0028	0.0029	0.023	<0.0060	<0.0060	0.0065	0.0452	180
	02/08/11	16 - 20	**2.6**	11	1.3	<0.35	3.0	19	53	89.9	260
P-3	02/10/11	11 - 12	**0.96**	20	<6.0	<0.60	12	<30	62	94.96	180
	02/10/11	16 - 17.5	**0.98**	13	2.1	<0.61	7.4	<3.0	64	87.48	190
P-4	02/09/11	10 - 12	**0.64**	0.47	0.20	<0.060	0.34	<0.30	0.40	2.05	94
	02/09/11	16 - 18	0.47	0.54	0.17	<0.044	<0.22	<0.22	0.78	1.96	220
	02/09/11	20 - 23	**5.4**	42	4.4	<1.2	<20	<20	200	251.8	164
PT-8N	06/05/12	10 - 12.5	**2.4**	62	7.3	<1.6	25	3.2	120	219.9	1018
	06/05/12	12.5 - 15	**<1.4**	53	6.9	<1.3	**26**	5.1	190	281.0	787
	06/05/12	15 - 16	**0.58**	15	1.3	<0.056	4.8	2.0	58	81.7	719
PT-4N	06/06/12	10 - 11.5	**4.7**	54	7.2	<1.2	**28**	3.1	94	191.0	2052
	06/06/12	15 - 16	**0.83**	3.3	0.29	<0.56	2.6	1.2	12	20.2	2996
PT-2N	06/05/12	No Recovery									
IP-1	06/05/12	10 - 12.7	**1.9**	**98**	8.7	<0.45	**27**	2.0	320	457.6	598
	06/05/12	15 - 17.5	**8.7**	53	5.8	<0.48	17	36	270	390.5	720
PT-2S	06/05/12	10 - 12	**2.2**	21	3.8	<0.48	9.0	1.2	50	87.2	754
	06/05/12	12 - 14	**4.2**	**79**	8.5	<0.98	**27**	48	420	586.7	788
	06/05/12	15 - 17	**8.5**	38	3.0	<1.0	12	69	190	320.5	808
PT-4S	06/05/12	10 - 12.5	**3.3**	35	5.8	<0.84	13	2.0	62	121.1	719
	06/05/12	12.5 - 15	**5.2**	**74**	8.9	<0.51	**31**	11	700	830.1	608
	06/05/12	15 - 17	**2.0**	5.1	0.51	<0.41	2.5	8.5	21	39.6	929
PT-8S	06/05/12	10 - 10.5	0.35	6.9	2.3	<0.49	3.5	0.43	2.0	15.5	1782
	06/05/12	12.5 - 15	0.26	11	2.1	<0.43	5.4	0.28	14	33.0	1606
	06/05/12	15 - 17	**0.52**	12	1.3	<0.60	4.6	37	70	125.4	1864
MW-8	06/06/12	10 - 13.3	<0.17	7.6	1.6	<0.60	4.0	0.32	20	33.5	1330
MW-9	06/07/12	10 - 12.6	**0.78**	0.071	0.053	<0.0012	0.021	0.037	0.10	1.1	1601
POST KLOZUR INJECTION											
SB-8S	07/10/12	10 - 12	**0.58**	18	7.4	<0.27	15	0.75	7.1	48.8	1,263
	07/10/12	12 - 14	**1.6**	**77**	16	<0.61	**34**	2.0	76	206.6	1,024
	07/10/12	15 - 17	**8.0**	**94**	11	<1.4	**33**	**200**	420	766.0	1,274
SB-4S	07/10/12	10 - 12	**0.99**	3.7	1.1	<0.24	2.2	0.31	5.1	13.4	876
	07/10/12	12 - 14	**8.6**	**120**	15	<1.3	**45**	5.0	490	683.6	878
	07/10/12	15 - 17	**17**	**140**	16	<0.71	**59**	**180**	690	1102.0	1,173
SB-2S	07/10/12	10 - 12	**2.8**	12	3.7	<0.27	9.0	1.6	29	58.1	859
	07/10/12	12 - 13	**19**	**180**	19	<0.33	**58**	65	810	1151.0	795
	07/10/12	15 - 17	**14**	72	7.2	<0.26	24	**120**	360	597.2	970
SB-1S	07/10/12	10 - 12.5	**1.6**	**190**	31	<0.50	**82**	2.5	330	637.1	502
	07/10/12	15 - 17.5	**1.7**	12	1.5	<0.11	5.9	11	61	93.1	831
SB-MW-8	07/10/12	10 - 13	**0.61**	0.35	0.11	<0.013	0.12	0.14	1.2	2.5	1,729
SB-1N	07/10/12	10 - 12.5	**1.2**	43	8.6	<0.49	14	1.4	84	152.2	384
	07/10/12	15 - 17.5	**1.2**	17	2.2	<0.23	7.9	5.5	82	115.8	773
SB-4N	07/10/12	10 - 11.5	**2.5**	53	7.4	<0.62	25	1.1	120	209.0	857
	07/10/12	15 - 17	**21**	**84**	9.3	<1.3	**34**	74	400	622.3	1,025
SB-8N	07/10/12	10 - 12	**1.9**	**85**	11	<1.3	**34**	2.5	360	494.4	857
	07/10/12	12 - 14	**2.7**	58	7.0	<0.50	24	2.2	240	333.9	790
	07/10/12	15 - 16	0.44	4.0	0.36	<0.012	2.7	1.1	17	25.6	692
SB-P2	07/10/12	10 - 12	0.29	19	10	<0.081	24	0.43	4.1	57.8	1,148
	07/10/12	15 - 17	**1.7**	23	3.5	<0.13	8.2	1.7	110	148.1	962
SB-P3	07/10/12	11 - 12	**0.96**	3.6	2.4	<0.18	1.7	0.83	13	22.5	1,451
	07/10/12	15 - 16	**1.2**	3.4	0.39	0.12	1.9	0.30	13	20.3	1,543
SB-P4	07/10/12	10 - 12	0.31	0.44	0.099	<0.012	0.073	0.072	0.56	1.6	1,900
	07/10/12	15 - 16	**1.9**	22	2.8	<0.12	8.1	0.83	79	114.6	92
	07/10/12	20 - 22	0.11	0.25	0.011	0.014	0.026	0.10	0.80	1.3	9

Note: 1) Concentrations exceeded the SHS are shown in **bold**.

Table 2.0: Groundwater Analytical Results Before and After Klozur Injection

Well ID	Date	Time Post-Injection	Chemicals of Concern (ug/L)							TOTAL COCs (ug/L)
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)	
Statewide Health Standard, Residential, Used Aquifer			*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*	*n/a*
PT-8N	06/07/12	BASELINE	**1,700**	**1,600**	71	**330**	**170**	330	2,900	7,101
PT-8N	06/11/12	3 day	**780**	**960**	<92	**<130**	**<350**	320	2,700	4,760
PT-8N	06/14/12	1 week	**980**	**1,200**	44	**88**	**220**	380	2,800	5,712
PT-8N	06/21/12	2 weeks	**1,400**	**1,100**	42	**140**	47	320	2,000	5,049
PT-8N	06/28/12	3 weeks	**1,400**	**1,400**	51	**140**	**200**	360	3,000	6,551
PT-8N	07/13/12	5 weeks	**1,400**	**1,400**	48	**140**	**220**	360	3,200	6,768
PT-4N	06/07/12	BASELINE	**4,100**	**3,100**	180	<270	**720**	**6,000**	**12,000**	26,100
PT-4N	06/11/12	3 day	**370**	**730**	50	<6.6	**180**	1,000	2,700	5,030
PT-4N	06/14/12	1 week	**620**	660	42	<10	**230**	**1,200**	2,400	5,152
PT-4N	06/21/12	2 weeks	**980**	**800**	42	19	**170**	**1,500**	2,900	6,411
PT-4N	06/28/12	3 weeks	**1,000**	**890**	46	20	**220**	**1,900**	3,400	7,476
PT-4N	07/13/12	5 weeks	**1,600**	**1,200**	66	**25**	**290**	**2,700**	4,400	10,281
PT-2N	06/07/12	BASELINE	**6,800**	**3,400**	140	<66	**650**	**8,700**	**15,000**	34,690
PT-2N	06/11/12	3 day	**1,000**	580	41	<27	**170**	**1,600**	2,500	5,891
PT-2N	06/14/12	1 week	**1,500**	**740**	46	<10	**260**	**2,100**	3,000	7,646
PT-2N	06/21/12	2 weeks	**1,800**	**830**	48	16	210	2,000	3,400	8,304
PT-2N	06/28/12	3 weeks	**1,500**	**870**	50	14	**250**	**2,200**	3,700	8,584
PT-2N	07/13/12	5 weeks	**1,600**	**880**	48	**21**	**260**	**2,600**	4,300	9,709
IP-1	06/07/12	BASELINE	**240**	**1,200**	86	<13	**260**	660	5,200	7,646
IP-1	06/11/12	3 day	**33**	160	17	<1.0	48	100	500	858
IP-1	06/14/12	1 week	**70**	240	18	<5.0	92	140	830	1,390
IP-1	06/21/12	2 weeks	**190**	540	30	5.1	140	540	2,200	3,645
IP-1	06/28/12	3 weeks	**380**	580	34	6.0	**170**	750	2,400	4,320
IP-1	07/13/12	5 weeks	**710**	680	35	11	**190**	**1,200**	3,100	5,926
PT-2S	06/07/12	BASELINE	**8,300**	**2,500**	88	**200**	**440**	**3,500**	**11,000**	26,028
PT-2S	06/11/12	3 day	**6,800**	**1,800**	64	**120**	**440**	**2,600**	8,200	20,024
PT-2S	06/14/12	1 week	**7,700**	**1,800**	54	**140**	**480**	**3,000**	7,700	20,874
PT-2S	06/21/12	2 weeks	**7,800**	**1,700**	57	**160**	**460**	**3,000**	7,600	20,777
PT-2S	06/28/12	3 weeks	**6,400**	**1,600**	50	**130**	**380**	**2,700**	7,300	18,560
PT-2S	07/13/12	5 weeks	**6,200**	**1,800**	54	**110**	**360**	**3,200**	8,100	19,824
PT-4S	06/07/12	BASELINE	**4,200**	**1,900**	140	**410**	**440**	**2,700**	7,300	17,090
PT-4S	06/11/12	3 day	**7,600**	**1,800**	89	**350**	**420**	**7,900**	7,200	25,359
PT-4S	06/14/12	1 week	**7,400**	**1,600**	71	**440**	**400**	**8,000**	6,200	24,111
PT-4S	06/21/12	2 weeks	**6,500**	**1,400**	61	**450**	**300**	**6,200**	6,000	20,911
PT-4S	06/28/12	3 weeks	**5,600**	**1,400**	68	**400**	**350**	**5,200**	5,400	18,418
PT-4S	07/13/12	5 weeks	**5,300**	**1,500**	73	**670**	**300**	**3,200**	5,500	16,543
PT-8S	06/07/12	BASELINE	**1,600**	**950**	60	**3,600**	**140**	**5,800**	3,600	15,750
PT-8S	06/11/12	3 day	**4,700**	**1,700**	85	**10,000**	**280**	**19,000**	7,800	43,565
PT-8S	06/14/12	1 week	**2,400**	470	24	**4,700**	**190**	**8,900**	3,300	19,984
PT-8S	06/21/12	2 weeks	**2,400**	70	<18	**6,900**	100	**5,500**	2,600	17,570
PT-8S	06/28/12	3 weeks	**1,800**	330	17	**5,100**	100	**5,000**	2,200	14,547
PT-8S	07/13/12	5 weeks	**1,700**	350	17	**7,100**	42	**3,000**	1,700	13,909

Note: 1) Concentrations exceeded the SHS are shown in **bold**.

Table 2.0: Groundwater Analytical Results Before and After Klozur Injection (cont.)

Well ID	Date	Time Post-Injection	Chemicals of Concern (ug/L)							TOTAL COCs (ug/L)
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)	
Statewide Health Standard, Residential, Used Aquifer			*5*	*700*	*840*	*20*	*100*	*1,000*	*10,000*	*n/a*
EW-2	06/07/12	BASELINE	**1,100**	520	36	**160**	**230**	46	2,000	4,092
EW-2	07/13/12	5 weeks	**610**	210	26	**290**	**140**	70	460	1,806
IW-1	06/07/12	BASELINE	**2,000**	**2,200**	120	**140**	**630**	280	4,300	9,670
IW-1	07/13/12	5 weeks	**1600**	**860**	61	**210**	**490**	94	1400	4,715
MW-1	06/07/12	BASELINE	**440**	**1,300**	120	<2.7	**520**	170	3,200	5,750
MW-1	07/13/12	5 weeks	**430**	**710**	40	**54**	**220**	110	1,700	3,264
MW-1	08/29/12	12 weeks	**230**	**440**	38	36	**160**	55	930	1,889
MW-3	06/07/12	BASELINE	**42**	<1.0	4.8	2.4	<5.0	4.7	3.2	57
MW-3	07/13/12	5 weeks	**16**	<1.0	2.0	3.0	0.85	1.8	0.92	25
MW-3	08/29/12	12 weeks	**9.6**	<1.0	1.1	2.3	<5.0	<5.0	<3.0	13
MW-4	06/07/12	BASELINE	0.39	<1.0	<1.0	1.7	<5.0	0.36	<3.0	2.5
MW-4	07/13/12	5 weeks	<1.0	<1.0	<1.0	2.2	<5.0	<5.0	<3.0	2.2
MW-4	08/29/12	12 weeks	<1.0	<1.0	<1.0	1.6	<5.0	<5.0	<3.0	1.6
MW-8	06/07/12	BASELINE	**450**	200	15	**150**	43	100	820	1,778
MW-8	06/21/12	2 weeks	**2,300**	**740**	31	**1,000**	**130**	520	3,500	8,221
MW-8	06/28/12	3 weeks	**2,700**	630	27	**1,100**	**140**	420	2,700	7,717
MW-8	07/13/12	5 weeks	**5,400**	220	16	**4,000**	90	330	3,200	13,256
MW-8	08/29/12	12 weeks	**3,300**	330	18	**2,500**	<50	80	1,000	7,228
MW-9	06/07/12	BASELINE	**330**	89	20	**130**	44	16	78	707
MW-9	06/21/12	2 weeks	**460**	200	31	**1,200**	65	17	230	2,203
MW-9	06/28/12	3 weeks	**400**	160	25	**1,600**	52	17	190	2,444
MW-9	07/13/12	5 weeks	**350**	150	19	**3,400**	42	14	210	4,185
MW-9	08/29/12	12 weeks	**350**	250	23	**2,700**	<50	<50	260	3,583

Note: 1) Concentrations exceeded the SHS are shown in **bold**.

Table 3.0: Additional Groundwater Parameters Before and After Klozur Injection

Well ID	Date	Time Post-Injection	Depth to Water	pH	Conductivity	Sodium	Sulfate	TOTAL COCs	Benzene
Units			feet	s.u.	ppm	ppm	ppm	ug/L	ug/L
Statewide Health Standard, Residential, Used Aquifer			*n/a*	*n/a*	*n/a*	*n/a*	*250*	*n/a*	*5*
PT-8N	06/07/12	BASELINE	15.41	6.52	981	247	31	7,101	1,700
PT-8N	06/08/12	During (100 gal)	15.10	9.64	1,559	573	--	--	--
PT-8N	06/08/12	During (320 gal)	14.81	6.79	1,070	292	--	--	--
PT-8N	06/08/12	Same Day	8.68	13.20	>10,000	22,643	--	--	--
PT-8N	06/09/12	1 day	13.49	12.92	>10,000	12,928	--	--	--
PT-8N	06/11/12	3 day	14.56	9.96	9,150	5,170	--	4,760	780
PT-8N	06/14/12	1 week	15.28	7.07	4,390	1,459	--	5,712	980
PT-8N	06/21/12	2 weeks	15.60	7.01	2,210	314	1100	5,049	1,400
PT-8N	06/28/12	3 weeks	15.80	6.52	2,290	355	200	6,551	1,400
PT-8N	07/13/12	5 weeks	16.30	6.47	2,270	358	25	6,768	1,400
PT-8N	07/31/12	8 weeks	16.45	6.98	2,100	702	--	--	--
PT-4N	06/07/12	BASELINE	14.81	6.66	1,510	439	82	26,100	4,100
PT-4N	06/08/12	During (100 gal)	8.56	13.64	>10,000	23,588	--	--	--
PT-4N	06/08/12	During (320 gal)	7.83	12.78	>10,000	23,301	--	--	--
PT-4N	06/08/12	Same Day	7.62	13.30	>10,000	23,301	--	--	--
PT-4N	06/09/12	1 day	8.50	12.90	>10,000	12,015	--	--	--
PT-4N	06/11/12	3 day	13.88	10.57	>10,000	13,332	--	5,030	370
PT-4N	06/14/12	1 week	14.95	10.33	>10,000	8,438	--	5,152	620
PT-4N	06/21/12	2 weeks	15.26	8.65	>10,000	7,059	16500	6,411	980
PT-4N	06/28/12	3 weeks	15.34	7.19	>10,000	7,112	1450	7,476	1,000
PT-4N	07/13/12	5 weeks	15.86	6.95	>10,000	8,080	1850	10,281	1,600
PT-4N	07/31/12	8 weeks	15.96	6.46	8,150	5,217	--	--	--
PT-2N	06/07/12	BASELINE	14.65	6.64	1,215	243	80	34,690	6,800
PT-2N	06/08/12	During (100 gal)	10.38	13.51	>10,000	17,501	--	--	--
PT-2N	06/08/12	During (320 gal)	7.70	13.02	>10,000	28,008	--	--	--
PT-2N	06/08/12	Same Day	7.46	13.34	>10,000	14,620	--	--	--
PT-2N	06/09/12	1 day	9.49	12.94	>10,000	10,337	--	--	--
PT-2N	06/11/12	3 day	13.51	12.05	>10,000	13,117	--	5,891	1,000
PT-2N	06/14/12	1 week	14.70	11.62	>10,000	8,832	--	7,646	1,500
PT-2N	06/21/12	2 weeks	15.06	9.33	>10,000	9,410	inter-	8,304	1,800
PT-2N	06/28/12	3 weeks	15.16	8.18	>10,000	11,288	2200	8,584	1,500
PT-2N	07/13/12	5 weeks	15.68	7.46	>10,000	13,336	3300	9,709	1,600
PT-2N	07/31/12	8 weeks	15.83	6.94	>10,000	6,608	--	--	--
IP-1	06/07/12	BASELINE	14.50	6.57	2,350	755	98	7,646	240
IP-1	06/09/12	1 day	8.26	13.18	>10,000	17,752	--	--	--
IP-1	06/11/12	3 day	10.67	11.74	>10,000	15,683	--	858	33
IP-1	06/14/12	1 week	14.42	9.61	>10,000	9,838	--	1,390	70
IP-1	06/21/12	2 weeks	14.94	7.33	>10,000	8,970	21000	3,645	190
IP-1	06/28/12	3 weeks	15.21	7.53	>10,000	9,528	2050	4,320	380
IP-1	07/13/12	5 weeks	15.73	7.47	>10,000	14,873	2550	5,926	710
IP-1	07/31/12	8 weeks	15.90	7.05	>10,000	8,162	--	--	--
PT-2S	06/07/12	BASELINE	14.74	6.62	1,018	138	22	26,028	8,300
PT-2S	06/08/12	During (100 gal)	12.86	7.54	3,390	286	--	--	--
PT-2S	06/08/12	During (320 gal)	12.29	7.48	939	299	--	--	--
PT-2S	06/08/12	Same Day	11.64	7.06	948	214	--	--	--
PT-2S	06/09/12	1 day	12.10	6.39	1,098	243	--	--	--
PT-2S	06/11/12	3 day	13.89	6.02	4,320	1,303	--	20,024	6,800
PT-2S	06/14/12	1 week	14.78	7.44	3,310	1,008	--	20,874	7,700
PT-2S	06/21/12	2 weeks	15.17	6.33	4,290	1,320	4000	20,777	7,800
PT-2S	06/28/12	3 weeks	15.17	6.52	4,910	1,533	600	18,560	6,400
PT-2S	07/13/12	5 weeks	15.55	6.78	6,410	2,791	8050	19,824	6,200
PT-2S	07/31/12	8 weeks	15.72	6.67	6,210	3,801	--	--	--

Table 3.0: Additional Groundwater Parameters Before and After Klozur Injection (cont.)

Well ID	Date	Time Post-Injection	Depth to Water	pH	Conductivity	Sodium	Sulfate	TOTAL COCs	Benzene
Units			feet	s.u.	ppm	ppm	ppm	ug/L	ug/L
Statewide Health Standard, Residential, Used Aquifer			*n/a*	*n/a*	*n/a*	*n/a*	*250*	*n/a*	*5*
PT-4S	06/07/12	BASELINE	16.87	6.84	686	130	53	17,090	4,200
PT-4S	06/08/12	During (100 gal)	16.84	7.20	627	142	--	--	--
PT-4S	06/08/12	During (320 gal)	16.81	7.27	610	137	--	--	--
PT-4S	06/08/12	Same Day	16.90	7.08	624	125	--	--	--
PT-4S	06/09/12	1 day	16.84	6.42	771	160	--	--	--
PT-4S	06/11/12	3 day	16.91	6.16	1,399	273	--	25,359	7,600
PT-4S	06/14/12	1 week	16.97	6.89	1,540	298	--	24,111	7,400
PT-4S	06/21/12	2 weeks	17.19	6.56	1,850	314	750	20,911	6,500
PT-4S	06/28/12	3 weeks	17.35	6.51	2,140	514	155	18,418	5,600
PT-4S	07/13/12	5 weeks	17.67	6.79	1,910	824	145	16,543	5,300
PT-4S	07/31/12	8 weeks	17.59	6.77	2,360	142	--	--	--
PT-8S	06/07/12	BASELINE	16.63	6.69	651	95	28	15,750	1,600
PT-8S	06/08/12	During (100 gal)	16.83	7.02	614	109	--	--	--
PT-8S	06/08/12	During (320 gal)	16.81	7.25	502	115	--	--	--
PT-8S	06/08/12	Same Day	16.83	7.14	518	107	--	--	--
PT-8S	06/09/12	1 day	16.86	6.44	558	107	--	--	--
PT-8S	06/11/12	3 day	16.92	6.29	659	117	--	43,565	4,700
PT-8S	06/14/12	1 week	17.00	6.81	632	110	--	19,984	2,400
PT-8S	06/21/12	2 weeks	17.14	6.63	618	103	54	17,570	2,400
PT-8S	06/28/12	3 weeks	17.30	6.45	697	117	<40	14,547	1,800
PT-8S	07/13/12	5 weeks	17.59	6.64	711	229	<40	13,909	1,700
PT-8S	07/31/12	8 weeks	17.80	6.65	578	77	--	--	--
EW-2	06/07/12	BASELINE	16.38	6.76	610	112	60	4,092	1,100
EW-2	06/08/12	During (320 gal)	16.25	6.48	640	127	--	--	--
EW-2	06/08/12	Same Day	16.28	6.46	616	125	--	--	--
EW-2	06/09/12	1 day	16.29	6.32	712	138	--	--	--
EW-2	06/11/12	3 day	16.35	6.24	818	144	--	--	--
EW-2	06/14/12	1 week	16.42	6.54	855	122	--	--	--
EW-2	06/21/12	2 weeks	16.56	6.54	954	150	120	--	--
EW-2	06/28/12	3 weeks	16.73	6.55	795	109	106	--	--
EW-2	07/13/12	5 weeks	16.99	6.81	704	185	146	1,806	610
EW-2	07/31/12	8 weeks	17.01	6.47	698	154	--	--	--
IW-1	06/07/12	BASELINE	16.68	6.42	1,640	406	24	9,670	2,000
IW-1	06/14/12	1 week	16.55	6.46	1,820	275	--	--	--
IW-1	06/21/12	2 weeks	16.69	6.39	1,660	858	<100	--	--
IW-1	06/28/12	3 weeks	16.86	6.34	1,590	308	<40	--	--
IW-1	07/13/12	5 weeks	17.09	6.40	1,620	475	<40	4,715	1600
IW-1	07/31/12	8 weeks	17.14	6.26	1,285	304	--	--	--

Table 3.0: Additional Groundwater Parameters Before and After Klozur Injection (cont.)

Well ID	Date	Time Post-Injection	Depth to Water	pH	Conductivity	Sodium	Sulfate	TOTAL COCs	Benzene
Units			feet	s.u.	ppm	ppm	ppm	ug/L	ug/L
Statewide Health Standard, Residential, Used Aquifer			*n/a*	*n/a*	*n/a*	*n/a*	*250*	*n/a*	*5*
MW-1	06/07/12	BASELINE	16.17	6.70	--	--	--	5,750	440
MW-1	06/08/12	Same Day		6.50	919	202	--	--	--
MW-1	06/09/12	1 day	16.18	6.54	874	190	--	--	--
MW-1	06/11/12	3 day	16.24	6.52	1,066	203	--	--	--
MW-1	06/14/12	1 week	16.30	6.78	889	138	--	--	--
MW-1	06/21/12	2 weeks	16.46	6.81	961	507	<40	--	--
MW-1	06/28/12	3 weeks	16.63	6.53	1,084	165	<40	--	--
MW-1	07/13/12	5 weeks	16.89	6.46	1,095	273	<40	3,264	430
MW-1	07/31/12	8 weeks	16.89	6.43	1,056	--	--	--	--
MW-1	08/29/12	12 weeks	17.29	6.8	--	439	--	1.889	230
MW-3	06/07/12	BASELINE	15.26	6.08	1,048	315	74	57	42
MW-3	06/14/12	1 week	15.47	6.55	1,063	233	--	--	--
MW-3	06/21/12	2 weeks	15.58	6.41	1,038	507	52	--	--
MW-3	06/28/12	3 weeks	15.74	6.11	1,056	253	<40	--	--
MW-3	07/13/12	5 weeks	16.00	6.05	1,170	409	90	25	16
MW-3	07/31/12	8 weeks	16.01	6.49	1,023	--	--	--	--
MW-3	08/29/12	12 weeks	16.37	6.1	--	--	--	13	9.6
MW-4	06/07/12	BASELINE	15.94	5.84	1,201	393	79	2.5	0.39
MW-4	06/14/12	1 week	16.05	6.16	1,421	373	--	--	--
MW-4	06/21/12	2 weeks	16.27	6.15	1,185	483	120	--	--
MW-4	06/28/12	3 weeks	16.41	6.51	998	268	136	--	--
MW-4	07/13/12	5 weeks	16.67	6.36	1,252	444	128	2.2	<1.0
MW-4	07/31/12	8 weeks	16.66	6.58	900	--	--	--	--
MW-4	08/29/12	12 weeks	16.91	6.5	--	290	--	1.6	<1.0
MW-8	06/07/12	BASELINE	15.60	6.89	662	130	78	1,778	450
MW-8	06/08/12	During (100 gal)	15.98	6.53	944	515	--	--	--
MW-8	06/08/12	During (320 gal)	15.97	6.82	1,570	541	--	--	--
MW-8	06/08/12	Same Day	15.96	6.84	1,660	495	--	--	--
MW-8	06/09/12	1 day	15.98	5.88	2,210	791	--	--	--
MW-8	06/11/12	3 day	16.05	5.98	2,550	937	--	--	--
MW-8	06/14/12	1 week	16.12	5.92	2,331	663	--	--	--
MW-8	06/21/12	2 weeks	16.27	7.08	1,309	743	120	8,221	2,300
MW-8	06/28/12	3 weeks	16.42	6.61	1,420	280	74	7,717	2,700
MW-8	07/13/12	5 weeks	16.68	6.10	1,630	580	98	13,256	5,400
MW-8	07/31/12	8 weeks	16.70	6.12	1,303	--	--	--	--
MW-8	08/29/12	12 weeks	17.07	6.2	--	308	--	7,228	3,300
MW-9	06/07/12	BASELINE	16.04	6.73	773	154	47	707	330
MW-9	06/14/12	1 week	16.21	6.59	943	143	--	--	--
MW-9	06/21/12	2 weeks	16.35	6.53	848	224	62	2,203	460
MW-9	06/28/12	3 weeks	16.53	6.57	943	145	52	2,444	400
MW-9	07/13/12	5 weeks	16.79	6.35	946	269	64	4,185	350
MW-9	07/31/12	8 weeks	16.80	6.31	853	--	--	--	--
MW-9	08/29/12	12 weeks	17.15	6.4	--	194	--	3,583	350

Table 4.0: Benzene Concentrations in Soil Before and After Klozur Injection

BASELINE				POST INJECTION					
Sample ID	Date	Depth (feet)	Benzene (mg/kg)	Sample ID	Date	Distance from IP-1 (feet)	Depth (feet)	Benzene (mg/kg)	Percent Decrease
IP-1	06/05/12	10 - 12.7	1.9	SB-1S	07/10/12	1	10 - 12.5	1.6	16%
IP-1	06/05/12	15 - 17.5	8.7	SB-1S	07/10/12	1	15 - 17.5	1.7	80%
IP-1	06/05/12	10 - 12.7	1.9	SB-1N	07/10/12	1	10 - 12.5	1.2	37%
IP-1	06/05/12	15 - 17.5	8.7	SB-1N	07/10/12	1	15 - 17.5	1.2	86%
PT-2N	06/05/12	No Recovery							
PT-2S	06/05/12	10 - 12	2.2	SB-2S	07/10/12	2	10 - 12	2.8	
PT-2S	06/05/12	12 - 14	4.2	SB-2S	07/10/12	2	12 - 13	19	
P-1	02/08/11	12 - 16	9.0						
PT-2S	06/05/12	15 - 17	8.5	SB-2S	07/10/12	2	15 - 17	14	
PT-4N	06/06/12	10 - 11.5	4.7	SB-4N	07/10/12	4	10 - 11.5	2.5	47%
PT-4N	06/06/12	15 - 16	0.83	SB-4N	07/10/12	4	15 - 17	21	
PT-4S	06/05/12	10 - 12.5	3.3	SB-4S	07/10/12	4	10 - 12	0.99	70%
PT-4S	06/05/12	12.5 - 15	5.2	SB-4S	07/10/12	4	12 - 14	8.6	
PT-4S	06/05/12	15 - 17	2.0	SB-4S	07/10/12	4	15 - 17	17	
PT-8N	06/05/12	10 - 12.5	2.4	SB-8N	07/10/12	8	10 - 12	1.9	21%
PT-8N	06/05/12	12.5 - 15	<1.4	SB-8N	07/10/12	8	12 - 14	2.7	
PT-8N	06/05/12	15 - 16	0.58	SB-8N	07/10/12	8	15 - 16	0.44	24%
PT-8S	06/05/12	10 - 10.5	0.35	SB-8S	07/10/12	8	10 - 12	0.58	
PT-8S	06/05/12	12.5 - 15	0.26	SB-8S	07/10/12	8	12 - 14	1.6	
PT-8S	06/05/12	15 - 17	0.52	SB-8S	07/10/12	8	15 - 17	8.0	
MW-8	06/06/12	10 - 13.3	<0.17	SB-MW-8	07/10/12	12	10 - 13	0.61	
P-3	02/10/11	11 - 12	0.96	SB-P3	07/10/12	13	11 - 12	0.96	
P-3	02/10/11	16 - 17.5	0.98	SB-P3	07/10/12	13	15 - 16	1.2	
P-2	02/08/11	8 - 12	0.010	SB-P2	07/10/12	15	10 - 12	0.29	
P-2	02/08/11	16 - 20	2.6	SB-P2	07/10/12	15	15 - 17	1.7	35%
P-4	02/09/11	10 - 12	0.64	SB-P4	07/10/12	19	10 - 12	0.31	52%
P-4	02/09/11	16 - 18	0.47	SB-P4	07/10/12	19	15 - 16	1.9	
P-4	02/09/11	20 - 23	5.4	SB-P4	07/10/12	19	20 - 22	0.11	98%

Notes: 1) Post injection benzene concentrations representing a decrease are shown in **BLUE**.
2) Post injection benzene concentrations representing an increase are shown in **RED**.

Table 5.0: Contaminant Mass Destroyed in Soil

Sampling Event	Average Total Contaminant Concentration (BTEXMNI) (mg/kg)	Area (sq ft)	Thickness (ft)	Volume (cu ft)	Volume (cu yds)	Tons (1.5)	Soil Mass (lbs)	Contaminant Mass (lbs)	Contaminant Mass Destroyed (lbs)
10-13.5 ft Zone									
Baseline	457.6	3.14	3.5	11	0.41	0.61	1,222	0.56	**0.02**
Post Injection	443	3.14	3.5	11	0.41	0.61	1,222	0.54	
13.5-17 ft Zone									
Baseline	390.5	3.14	3.5	11	0.41	0.61	1,222	0.48	**0.35**
Post Injection	104.45	3.14	3.5	11	0.41	0.61	1,222	0.13	

Table 6.0: Contaminant Mass Destroyed in Groundwater

Sampling Event	Total Contaminant Concentration (mg/L)	Area (sq ft)	Thickness (ft)	Volume (cu ft)	Porosity	Adjusted Volume (cu ft)	Weight (pounds)	Contaminant Mass (lbs)	Contaminant Mass Destroyed (lbs)
Baseline	20.313	78.5	8	628	0.20	126	7,837	0.16	**0.078**
Post Injection	10.502	78.5	8	628	0.20	126	7,837	0.082	

Table 7.0: Summary of Total Contaminant Mass Destroyed

Contaminant Mass Type	Contaminant Mass Destroyed (lbs)
Soil in 10-13.5 ft Zone	0.02
Soil in 13.5-17 ft Zone	0.35
Groundwater	0.078
TOTAL	**0.448**

Table 8.0: Estimated Contaminant Mass in Soil (Revised)

Zone	Total Contaminant Concentration (mg/kg)	Area (sq ft)	Thickness (ft)	Volume (cu ft)	Volume (cu yds)	Tons (1.5)	Soil Mass (lbs)	Contaminant Mass (lbs)
Unsaturated Zone	50	740	2	1,480	55	82	164,444	8.2
	200	740	2	1,480	55	82	164,444	32.9
Saturated / Smear Zone	100	2,370	7	16,590	614	922	1,843,333	184
	400	2,370	7	16,590	614	922	1,843,333	737
Zone Outside the Area of Impact to Soil	0.6	14,448	8	115,584	4,281	6,421	12,842,667	7.7
	21	14,448	8	115,584	4,281	6,421	12,842,667	270

Table 9.0: Estimated Contaminant Mass in Groundwater (Revised)

Area	Total Contaminant Concentration (mg/L)	Area (sq ft)	Thickness (ft)	Volume (cu ft)	Porosity	Adjusted Volume (cu ft)	Weight (pounds)	Contaminant Mass (lbs)	Total Contaminant Mass (lbs)
Source Area (IP-1)	9.673	500	8	4,000	0.20	800	49,920	0.48	1.68
Area of High Concentrations (Benzene 500 ug/L+)	3.908	600	8	4,800	0.20	960	59,904	0.23	
Area of Moderate Concentrations (Benzene 50-500 ug/L)	1.914	5,040	8	40,320	0.20	8,064	503,194	0.96	
Area of Low Concentrations (Benzene 5-50 ug/L)	0.025	5,490	8	43,920	0.20	8,784	548,122	0.01	

Table 10.0: Klozur Calculations for Full Scale Implementation

Media	Zone	Low Estimate		Low Estimate	
		Contaminant Mass (lbs)	Klozur Required for Destruction (lbs)	Contaminant Mass (lbs)	Klozur Required for Destruction (lbs)
Soil	Unsaturated Zone	8.2	9,200	32.9	36,700
Soil	Saturated / Smear Zone	184	205,000	737	822,000
Soil	Zone Outside the Area of Impact to Soil	7.7	8,600	270	301,000
Groundwater	All	1.7	1,900	1.7	1,900
TOTAL		201.6	**224,700**	1,041.6	**1,161,600**

MATERIAL SAFETY DATA SHEET

Klozur®

MSDS Ref. No.: 7775-27-1-12
Date Approved: 05/13/2009
Revision No.: 5

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	Klozur®
SYNONYMS:	Sodium Persulfate, Sodium Peroxydisulfate; Disodium Peroxydisulfate
GENERAL USE:	In situ and ex situ chemical oxidation of contaminants and compounds of concern for environmental remediation applications.

MANUFACTURER

FMC CORPORATION
FMC Peroxygens
1735 Market Street
Philadelphia, PA 19103
(215) 299-6000 (General Information)
msdsinfo@fmc.com (Email - General Information)

EMERGENCY TELEPHONE NUMBERS

(303) 595-9048 (Medical - U.S. - Call Collect)

For leak, fire, spill, or accident emergencies, call:
(800) 424-9300 (CHEMTREC - U.S.A. & Canada)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- White, odorless, crystals
- Oxidizer.
- Decomposes in storage under conditions of moisture (water/water vapor) and/or excessive heat causing release of oxides of sulfur and oxygen that supports combustion. Decomposition could form a high temperature melt. See Section 10 ("Stability and Reactivity").

POTENTIAL HEALTH EFFECTS: Airborne persulfate dust may be irritating to eyes, nose, lungs, throat and skin upon contact. Exposure to high levels of persulfate dust may cause difficulty in breathing in sensitive persons.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%	EC No.	EC Class
Sodium Persulfate	7775-27-1	>99	231-892-1	Xn-O; R8-R22-R36/37/38-R42/43

4. FIRST AID MEASURES

EYES: Flush with plenty of water. Get medical attention if irritation occurs and persists.

SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTES TO MEDICAL DOCTOR: This product has low oral toxicity and is not irritating to the eyes and skin. Flooding of exposed areas with water is suggested. For gastric lavage or emesis induction, consider the possible aggravation of esophageal injury, and the expected absence of system effects. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Deluge with water.

FIRE / EXPLOSION HAZARDS: Product is non-combustible. On decomposition releases oxygen which may intensify fire. Presence of water accelerates decomposition.

FIRE FIGHTING PROCEDURES: Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates. Wear full protective clothing and self-contained breathing apparatus.

FLAMMABLE LIMITS: Non-combustible

SENSITIVITY TO IMPACT: No data available

SENSITIVITY TO STATIC DISCHARGE: Not available

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to regulatory agencies procedures.

7. HANDLING AND STORAGE

HANDLING: Use adequate ventilation when transferring product from bags or drums. Wear respiratory protection if ventilation is inadequate or not available. Use eye and skin protection. Use clean plastic or stainless steel scoops only.

STORAGE: Store (unopened) in a cool, clean, dry place away from point sources of heat, e.g. radiant heaters or steam pipes. Use first in, first out storage system. Avoid contamination of opened product. In case of fire or decomposition (fuming/smoking) deluge with plenty of water to control decomposition. For storage, refer to NFPA Bulletin 430 on storage of liquid and solid oxidizing materials.

COMMENTS: VENTILATION: Provide mechanical general and/or local exhaust ventilation to prevent release of dust into work environment. Spills should be collected into suitable containers to prevent dispersion into the air.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Sodium Persulfate	0.1 mg/m^3 (TWA)		

ENGINEERING CONTROLS: Provide mechanical local general room ventilation to prevent release of dust into the work environment. Remove contaminated clothing immediately and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use cup type chemical goggles. Full face shield may be used.

RESPIRATORY: Use approved dust respirator when airborne dust is expected.

PROTECTIVE CLOTHING: Normal work clothes. Rubber or neoprene footwear.

GLOVES: Rubber or neoprene gloves. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	None
APPEARANCE:	White crystals
AUTOIGNITION TEMPERATURE:	Not applicable. No evidence of combustion up to 800°C. Decomposition will occur upon heating.
BOILING POINT:	Not applicable
COEFFICIENT OF OIL / WATER:	Not applicable
DENSITY / WEIGHT PER VOLUME:	Not available
EVAPORATION RATE:	Not applicable (Butyl Acetate = 1)
FLASH POINT:	Non-combustible
MELTING POINT:	Decomposes
ODOR THRESHOLD:	Not applicable
OXIDIZING PROPERTIES:	Oxidizer
PERCENT VOLATILE:	Not applicable
pH:	typically 5.0 - 7.0 @ 25 °C (1% solution)
SOLUBILITY IN WATER:	73 % @ 25 °C (by wt.)
SPECIFIC GRAVITY:	2.6 (H_2O=1)
VAPOR DENSITY:	Not applicable (Air = 1)
VAPOR PRESSURE:	Not applicable

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:	Heat, moisture and contamination.
STABILITY:	Stable (becomes unstable in presence of heat, moisture and/or contamination).
POLYMERIZATION:	Will not occur
INCOMPATIBLE MATERIALS:	Acids, alkalis, halides (fluorides, chlorides, bromides and iodides), combustible materials, most metals and heavy metals, oxidizable materials, other oxidizers, reducing agents, cleaners, and organic or carbon containing compounds. Contact

with incompatible materials can result in a material decomposition or other uncontrolled reactions.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxygen that supports combustion and oxides of sulfur.

COMMENTS: PRECAUTIONARY STATEMENT: Pumping and transport of Klozur persulfate requires appropriate precautions and design considerations for pressure and thermal relief.

Decomposing persulfates will evolve large volumes of gas and/or vapor, can accelerate exponentially with heat generation, and create significant and hazardous pressures if contained and not properly controlled or mitigated.

Use with alcohols in the presence of water has been demonstrated to generate conditions that require rigorous adherence to process safety methods and standards to prevent escalation to an uncontrolled reaction.

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11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Non-irritating (rabbit) [FMC Ref. ICG/T-79.029]

SKIN EFFECTS: Non-irritating (rabbit) [FMC Ref. ICG/T-79.029]

DERMAL LD_{50}: > 10 g/kg [FMC Ref. ICG/T-79.029]

ORAL LD_{50}: 895 mg/kg (rat) [FMC Ref. ICG/T-79.029]

INHALATION LC_{50}: 5.1 mg/l (rat) [FMC Ref. I95-2017]

SENSITIZATION: May be sensitizing to allergic persons. [FMC Ref. ICG/T-79.029]

TARGET ORGANS: Eyes, skin, respiratory passages

ACUTE EFFECTS FROM OVEREXPOSURE: Dust may be harmful and irritating. May be harmful if swallowed.

CHRONIC EFFECTS FROM OVEREXPOSURE: Sensitive persons may develop dermatitis and asthma [Respiration 38:144, 1979]. Groups of male and female rats were fed 0, 300 or 3000 ppm sodium persulfate in the diet for 13 weeks, followed by 5000 ppm for 5 weeks. Microscopic examination of tissues revealed some injury to the gastrointestinal tract at the high dose (3000 ppm) only. This effect is not unexpected for an oxidizer at high concentrations. [Ref. FMC I90-1151, Toxicologist 1:149, 1981].

CARCINOGENICITY:

NTP:	Not listed
IARC:	Not listed
OSHA:	Not listed
OTHER:	ACGIH: Not listed

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

Bluegill sunfish, 96-hour LC_{50} = 771 mg/L [FMC Study I92-1250]
Rainbow trout, 96-hour LC_{50} = 163 mg/L [FMC Study I92-1251]
Daphnia, 48-hour LC_{50} = 133 mg/L [FMC Study I92-1252]
Grass shrimp, 96-hour LC_{50} = 519 mg/L [FMC Study I92-1253]

CHEMICAL FATE INFORMATION: Biodegradability does not apply to inorganic substances.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose as a hazardous waste in accordance with local, state and federal regulatory agencies.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

PROPER SHIPPING NAME:	Sodium Persulfate
PRIMARY HAZARD CLASS / DIVISION:	5.1 (Oxidizer)
UN/NA NUMBER:	UN 1505
PACKING GROUP:	III
LABEL(S):	5.1 (Oxidizer)
PLACARD(S):	5.1 (Oxidizer)
MARKING(S):	Sodium Persulfate, UN 1505
ADDITIONAL INFORMATION:	Hazardous Substance/RQ: Not applicable

49 STCC Number: 4918733

This material is shipped in 225 lb. fiber drums, 55 lb. poly bags and 1000 - 2200 lb. IBC's (supersacks).

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

PROPER SHIPPING NAME: Sodium Persulfate

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) / INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

PROPER SHIPPING NAME: Sodium Persulfate

OTHER INFORMATION:

Protect from physical damage. Do not store near acids, moisture or heat.

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15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A):
Not applicable

SECTION 311 HAZARD CATEGORIES (40 CFR 370):
Fire Hazard, Immediate (Acute) Health Hazard

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):
The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.:
None

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):
There are no ingredients in this product, which are subject to Section 313 reporting requirements.

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):
Unlisted, RQ = 100 lbs., Ignitability

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA INVENTORY STATUS (40 CFR 710):
All components are listed or exempt.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
RCRA IDENTIFICATION OF HAZARDOUS WASTE (40 CFR 261):
Waste Number: D001

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Hazard Classification / Division: C
D2A
D2B

Domestic Substance List: All components are listed or exempt.

INTERNATIONAL LISTINGS

Australia (AICS): Listed
China: Listed
Japan (ENCS): (1)-1131
Korea: KE-12369
Philippines (PICCS): Listed

HAZARD AND RISK PHRASE DESCRIPTIONS:

EC Symbols:	Xn	(Harmful)
	O	(Oxidizer)
EC Risk Phrases:	R8	(Contact with combustible material may cause fire)
	R22	(Harmful if swallowed.)
	R36/37/38	(Irritating to eyes, respiratory system and skin.)
	R42/43	(May cause sensitization by inhalation or by skin contact.)

16. OTHER INFORMATION

HMIS

Health	1
Flammability	0
Physical Hazard	1
Personal Protection (PPE)	J

Protection = J (Safety goggles, gloves, apron & combination dust & vapor respirator)

HMIS = Hazardous Materials Identification System

Degree of Hazard Code:
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

NFPA

Health	1
Flammability	0
Reactivity	1
Special	OX

SPECIAL = OX (Oxidizer)

NFPA (National Fire Protection Association)

Degree of Hazard Code:
4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

REVISION SUMMARY:
This MSDS replaces Revision #4, dated September 18, 2006.
Changes in information are as follows:
Section 1 (Product and Company Identification)
Section 3 (Composition / Information on Ingredients)
Section 15 (Regulatory Information)
Section 16 (Other Information)

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KLOZUR®

FMC

Technical data

Klozur™

Environmental grade persulfate
CAS No. 7775-27-1

Typical formula by weight percent	$Na_2S_2O_8$	99% MW 238.1 g/mol
Active oxygen content		6.7%
pH of solution strength	**wt%**	**pH**
	20%	5.9
	Note: pH of solution will decrease over time.	

Typical properties	
Odor	none
Appearance	white crystals
Melting point	decomposes
Solubility @ 25°C	73 grms/100 grms H_2O
Loose bulk density, lb/ft^3	69.9
Crystal density, g/cc	2.59

Typical metallic impurity concentrations (ppm)	
Iron	2
Copper	<0.2
Chromium	<0.15
Lead	<0.2

Uses
Chemical oxidation of organic contaminants in conjunction with FMC Activation Chemistries

Shipment/container information:
DOT Classification: 5.1 (Oxidizer), yellow Oxidizer label.
55 lb (25 kg) polyethylene bag;
225 lb (102.3 kg) fiber drum with polyethylene liner;
2,200 lb (1,000 kg) woven polypropylene sack with polyethylene liner

HMIS classification:	
Health	1
Flammability	0
Physical hazard	1
Personal protection	J

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FMC Corporation Active Oxidants Division 1735 Market Street Philadelphia, Pennsylvania 19103 215-299-6000

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Klozur™ Activation Chemistries

Selection Guide:
- ✓ recommended, lab or field data demonstrating success
- ■ recommended, no available lab or field data
- Ø not recommended

Contaminant \ Activator	Fe Chelate	Alkaline	Hydrogen Peroxide	Heat
Chlorinated Solvents				
Tetrachloroethene (PCE)	✓	✓	✓	✓
Trichloroethene (TCE)	✓	✓	✓	✓
Dichloroethene (*cis* and *trans* DCE)	✓	✓	✓	✓
Trichloroethane (TCA)	Ø	✓	✓	✓
Dichloroethane (DCA)	Ø	✓	■	✓
Carbon tetrachloride	Ø	✓	✓	✓
Chloroethane	Ø	■	■	✓
Chloroform	Ø	✓	✓	✓
Chloromethane	Ø	■	■	✓
Chlorotoluene	■	■	■	✓
Methylene chloride	Ø	✓	✓	✓
Vinyl chloride	✓	✓	✓	✓
Dichloropropane	Ø	■	■	✓
Dichloropropene	Ø	■	■	✓
Hexachlorobutadiene	Ø	■	■	✓
Tetrachloroethane	Ø	■	✓	■
Trichloropropane	Ø	■	■	✓
BTEX				
Benzene	✓	✓	✓	✓
Toluene	✓	✓	✓	✓
Ethylbenzene	✓	✓	✓	✓
Xylenes	✓	✓	✓	✓
PAHs				
Acenaphthene	✓	✓	■	✓
Acenaphthylene	✓	✓	■	✓
Anthracene	■	✓	■	■
Benzo(a)anthracene	■	✓	■	■
Benzo(a)pyrene	■	✓	■	■
Benzo(b)fluoranthene	■	✓	■	■
Benzo(ghi)perylene	■	✓	■	■
Bis(2-ethyhexyl)phthalate	■	✓	■	■
n-butylbenzene	✓	■	■	✓
Chrysene	■	✓	■	■
Dibenzo(ah)anthracene	■	✓	■	■
Fluorene	✓	✓	■	✓
Naphthalene	✓	✓	■	✓
Nitrobenzene	Ø	Ø	✓	✓
Phenathrene	✓	✓	✓	✓
Propylbenzene	✓	✓	✓	✓
4-iso-propyltoluene	✓	✓	✓	✓
Pyrene	■	✓	■	■
Styrene	✓	✓	✓	✓
Trimethylbenzene	✓	✓	✓	✓
Oxygenates				
Methyl tert-butyl ether (MTBE)	✓	✓	✓	✓
Tert-butyl alcohol (TBA)	✓	✓	✓	✓

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KLOZUR

Selection Guide:

- ✓ **recommended, lab or field data demonstrating success**
- ■ **recommended, no available lab or field data**
- Ø **not recommended**

Contaminant / Activator	Fe Chelate	Alkaline	Hydrogen Peroxide	Heat
Petroleum Hydrocarbons				
GRO (octane)	Ø	✓	✓	■
DRO (dodecane)	Ø	✓	✓	■
ORO (C20 alkane)	Ø	✓	✓	■
Creosote (coal tar)	✓	✓	■	■
Chlorobenzenes				
Chlorobenzene	✓	✓	■	✓
Dichlorobenzene	✓	✓	■	✓
Trichlorobenzene	Ø	✓	■	✓
Phenols				
Phenol	■	■	■	✓
4-chloro-3-methyl phenol	■	■	■	✓
2-chlorophenol	■	■	■	✓
2,4-dichlorophenol	■	■	■	✓
2,4-dinitrophenol	■	■	■	✓
4-nitrophenol	■	■	■	✓
Pentachlorophenol	■	■	■	✓
Haloalkanes				
Dichlorodifluoromethane (Freon 12)	Ø	✓	■	✓
Trichlorofluouromethane (Freon 11)	Ø	✓	■	✓
Trichlorotrifluoroethane (Freon 113)	Ø	✓	■	✓
Pesticides				
α-Chlordane	Ø	✓	■	✓
DDD	Ø	✓	■	✓
DDE	Ø	✓	■	✓
DDT	Ø	✓	■	✓
Heptachlor Epoxide	Ø	✓	■	✓
Lindane (hexachlorocyclohexane)	✓	✓	✓	✓
Miscellaneous				
Acetone	■	✓	✓	✓
4-methyl-2-pentanone (MIBK)	✓	■	✓	✓
1,4-dioxane	✓	✓	✓	✓
BCEE	Ø	✓	✓	✓
BCEM	Ø	✓	✓	✓
Perchlorate	Ø	Ø	Ø	Ø
Polychlorinated biphenyls (PCBs)	Ø	✓	■	✓

The Klozur™ Activator Selection Guide is for guidance only. It is recommended that a suitable treatability study be performed to verify applicability to you specific contaminant and site conditions.

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Safe Handling, Use and Storage

Technical Bulletin

Background

Klozur® sodium persulfate is a stable, highly soluble, crystalline material, which upon activation is capable of oxidizing a broad range of recalcitrant compounds. When properly handled and stored, sodium persulfate does not present a serious health hazard. However, as with all oxidizing chemicals, Klozur® sodium persulfate requires careful attention to all aspects of handling and use. This bulletin covers the basic safe handling, use and storage practices for Klozur® sodium persulfate. For more information, please refer to the Material Safety Data Sheet (MSDS), which is available from FMC.

Personal Protective Equipment

Eye protection – wear chemical goggles or a face shield whenever splashing, spraying or eye contact is possible.

Respiratory – use dust respirator approved by NIOSH/MSA whenever exposure may exceed the established standard listed in the MSDS.

Hands – wear general purpose neoprene gloves

Clothing – wear ordinary work clothes with long sleeves and full-length pants.

Footwear – wear shoes with chemical resistant soles (neoprene)

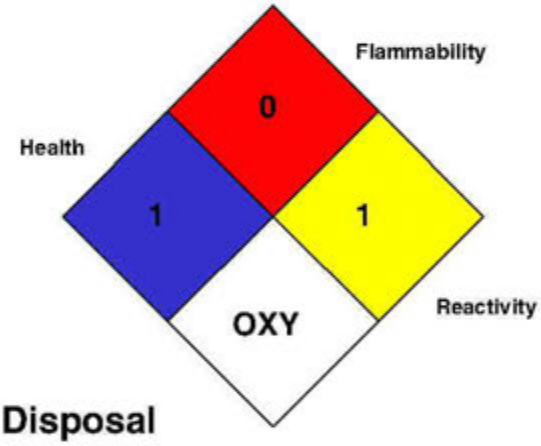
First Aid

Eye Contact – flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

Skin Contact – wash with plenty of soap and water. If irritation occurs and persists, obtain medical attention. Wash clothing before reuse.

Inhalation – get fresh air. If breathing difficulty or discomfort occurs, call a physician.

Ingestion – drink one to two glasses of water. Do not induce vomiting. Call a physician immediately.



Disposal

Klozur® persulfate crystals should never be discarded in trash bins. Contact with moisture, contaminants, and / or reducing agents can initiate a chemical reaction or persulfate decomposition. Persulfate crystals that become waste material are classified as hazardous waste, because they are oxidizers. Persulfate that is spilled on the floor, or otherwise contaminated, is best dissolved in copious amounts of water. Do not return spilled persulfate back to the original container.

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An acceptable disposal method for spent Klozur® persulfate solutions is to dilute with large quantities of water and dispose via a treatment system. Any disposal method must be in full accordance with all local, state and federal agencies.

Neutralization of Klozur® persulfate solutions may be performed, but must be done slowly with mild alkali (example: bicarbonate) with ample heat sink or cooling to prevent rapid temperature increases and gas release.

Materials Compatibility

304 and 316 stainless steel are recommended for mixing, conveyance and storage equipment (tanks, pipes, etc.) Other compatible materials include: polyvinyl chloride, polyethylene, Plexiglas®, Teflon®, chemical stoneware and glass.

Metals other than 304 and 316 stainless steel may cause persulfate decomposition, and in turn may be corroded by the persulfate. This is particularly true of Monel, copper, brass and iron. The pH of Klozur® persulfate solutions will decrease over time, and may drop below a pH of 2.

Storage

Klozur® persulfate should be kept in a cool, dry storage area. If stored in bulk, NFPA 430 guidelines should be followed.

Do not store or process Klozur® persulfate solutions in sealed or closed containers or vessels. Normal solution decomposition will release oxygen gas, which may over-pressurize a sealed container and cause rupture.

Decomposition Hazard of Klozur® Persulfate Crystals

Overheating or contamination of persulfate can lead to a self-accelerating decomposition. Persulfate decomposes to form solid sulfate salts and emit noxious fumes of SO_x. Oxygen and heat released from persulfate decomposition may induce combustion in flammable materials.

The only way to halt a decomposition event is to apply large quantities of water. One gallon of water per pound of decomposing material is recommended. Do not use less than a quart of water per pound of material, as this may intensify the decomposition.

Observe the following precautions to prevent decomposition:

Do not expose Klozur® persulfate or their containers to moisture. Moisture reduces the decomposition temperature.

Do not store Klozur® persulfate near incompatible materials: reducing agents, acids, bases, ammoniacal solutions, or alkaline cleaners.

Do not store near point sources of heat (steam pipes, electrical appliances, heating vents, gas flames radiant heaters, etc). Do no store in ambient temperatures above 113 ºF or 45 ºC

Do not return spilled or unused portions to the original container.

Do not use on hydrocarbon free product.

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Technical Bulletin

FMC's patent pending activation chemistries provide unrivaled power and performance in the subsurface for ISCO applications

Klozur™ sodium persulfate upon activation generates the sulfate radical ($SO_4^{-\bullet}$), a very strong oxidant capable of oxidizing a broad range of recalcitrant compounds of concern (CoC's). Although heat or Fe(II) salts can be used to activate persulfate, heat activation may not be a practical solution, and the performance of Fe(II) may be hindered by availability in the groundwater. FMC has tested certain chemical activators, which in combination with **Klozur™** persulfate destroy many of the most recalcitrant compounds. FMC has patents pending for use of combinations of these chemical activators with persulfate. These activator chemistries for **Klozur ™** persulfate include:

- **Chelated Metal Activators** — Improved transportability
- **H_2O_2 Activation** — Dual oxidant combination for oxidation of recalcitrant CoC's
- **Alkaline Activation** — pH control for the formation of energetic persulfate radicals

Choosing the right chemical activator for use with **Klozur ™** persulfate is a function of several factors, including the effectiveness against CoC's and subsurface conditions. Table 1 shows the general effectiveness of the activated persulfate chemistries for various classes of CoC's, as determined in aqueous solutions under laboratory conditions (heat and Fe(II) activation methods also included).

Chemistry	BTEX	chlorinated ethenes	chlorinated ethanes	MTBE	PCB	1,4-dioxane
Un-activated Sodium Persulfate	Y	N	N	N	N	N
Sodium Persulfate + Fe(II)	Y	Y	N	Y	?	Y
Sodium Persulfate + Heat	Y	Y	Y	Y	Y	Y
Klozur™ Activated Persulfate with Chelated Metals	Y	Y	N	Y	?	Y
Klozur ™ Activated Persulfate with Hydrogen Peroxide Activation	Y	Y	Y	Y	?	?
Klozur ™ Activated Persulfate with Alkaline Activation	Y	Y	Y	Y	Y	Y

Table 1: General Effectiveness of "Klozur™ Persulfate" Activator Chemistries for Broad Classes of Contaminants of Concern (Y – generally effective, N – generally not effective, ? – data not yet available).

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For **Klozur**™ persulfate ordering information, please contact:

Customer Service
Voice: 800-345-2701
Fax: 215-299-6612

For technical information, please contact:

Philip Block, Ph.D.
Technology Manager
215-299-6645

Frank C. Sessa, M.S.
Technologist
215-299-5993

For sales information, please contact:

Scott Steffl
Commercial Manager
215-299-6031

Linda Osborne
Technical Sales Manager
815-228-1306

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Corrosion and Material Compatibility

Technical Bulletin

Background

Klozur® Persulfate solutions are used to treat contaminated soil and groundwater and can remediate a wide range of organic contaminants. However, Klozur® Persulfate is a very strong oxidant, and its solutions may be very acidic (pH ≤ 2) under many conditions, resulting in a corrosive environment for many metals and materials. In this bulletin, results from corrosion studies using un-activated and activated persulfate solutions are presented and recommendations regarding materials of compatibility are made. For additional information regarding the safety of Klozur® Persulfate, please refer to the Material Safety Data Sheet (MSDS), which is available from FMC.

Corrosion

Laboratory tests were conducted to evaluate the performance of commonly-used engineering materials exposed to Klozur® Persulfate solutions (both activated and un-activated). The tests were performed at two different persulfate solution concentrations: 20 wt% representing typical make-up solutions being injected, and 40 g / L representing typical *in situ* ground water concentrations. These tests were conducted per the guidelines outlined in ASTM G31-72. Corrosion rates for metallic coupons were calculated based on changes in weight over the exposure time. Non-metallic coupons were observed for visual changes and changes in physical properties. Structural properties of concrete and non-metallics were not measured.

Results

For un-activated Klozur® Persulfate solutions, no observable corrosion on stainless steel (304L and 316L) was observed during the testing. However, for carbon steel, copper and brass, severe corrosion was observed shortly after the testing was initiated, for both the concentrated (20 wt%) and diluted persulfate solutions. The corrosion rates for carbon steel and brass were observed to decrease when evaluated after one and two months as compared to the one week exposure. However, the rates were sufficiently high to indicate that general corrosion was on-going throughout the two month period, indicating that there was no formation of a protective corrosion-product layer. Kynar® and FRP demonstrated satisfactory performance over the one month exposure with no noticeable weight gain or softening observed. Concrete, natural rubber and synthetic rubber showed indications of degradation with long-term exposure to the concentrated persulfate solution.

In general, the impact of the Fe-EDTA activated persulfate solution was similar to the un-activated persulfate solution. No significant increases in corrosion were observed due to the presence of the activator system or subsequent formation of sulfate radicals.

For high pH activated persulfate solutions, sodium hydroxide was added to raise the pH to above 10 and to neutralize sulfuric acid formed upon persulfate decomposition. Significant decreases in corrosion rates were observed for high pH activated persulfate in contact with copper, brass and carbon steel. Negligible corrosion was observed for these metals after one month exposure, even at the 20% persulfate concentration. In addition, no noticeable corrosion was observed for stainless steel. Significant reaction with concrete was observed, however. Significant weight gain (5 – 10%) and bleaching were observed for the concrete after one month exposure to the

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high pH activated persulfate solution, and some dissolution of the concrete was noted during the test.

Table 1: Results for Un-Activated Klozur® Persulfate Solutions (20 wt%) at room temperature after 1 week and 1 months exposure time

mpy – milli-inches per year; ✓ - compatible material, ⊖ - non-compatible material

Material	1 week	1 month	Comments
Stainless steels (304L, 316L)	✓	✓	< 1 mpy. No noticeable corrosion over 2 months
Copper Brass	> 100 mpy ⊖	20 – 50 mpy ⊖	Severe general corrosion, corrosion rate decreases with time.
Carbon steel	> 200 mpy ⊖	50 – 100 mpy ⊖	Severe general corrosion, etching at welds, corrosion rate decreases with time.
Kynar® (PVDF)	✓	✓	No noticeable changes after 2 months exposure
FRP (fiber-reinforced plastic)	✓	✓	No noticeable changes after 2 months exposure
Concrete	Weight gain, bleached appearance	Weight gain (5 – 10%), bleached appearance	Increasing weight gain over time. Some dissolution observed as residue in test chamber.
Natural Rubber	Slight weight gain	Slight weight gain	Cracks and blisters observed after 1 month exposure.
Synthetic rubber (neoprene)	Slight weight gain	Slight weight gain	Cracks and blisters observed after 1 month exposure

Table 2: Results for Un-Activated Klozur® Persulfate Solution (40 g / L) at room temperature after 1 week and 2 months exposure time

mpy – milli-inches per year; ✓ - compatible material, ⊖ - non-compatible material

Material	1 week	1 month	Comments
Stainless steels (304L, 316L)	✓	✓	< 1 mpy. No noticeable corrosion over 2 months
Copper Brass	> 50 mpy ⊖	< 20 mpy ⊖	Severe general corrosion, corrosion rate decreases with time.
Carbon steel	> 50 mpy ⊖	< 20 mpy ⊖	Several general corrosion, etching at welds, corrosion rate decreases with time.
Kynar® (PVDF)	✓	✓	No noticeable changes after 1 month exposure
FRP (fiber-reinforced plastic)	✓	✓	No noticeable changes after 1 month exposure
Concrete	Weight gain, bleached appearance	Weight gain (5 – 10%), bleached appearance	Increasing weight gain over time. Some dissolution observed as residue in test chamber.

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Natural Rubber	Slight weight gain	Slight weight gain	
Synthetic rubber (neoprene)	Slight weight gain	Slight weight gain	

Table 3: Results for Fe-EDTA Klozur® Persulfate Solutions, 20 wt% and 40 g / L at room temperature after 1 month exposure time

mpy – milli-inches per year; ✓ - compatible material, ⊖ - non-compatible material

Material	20 wt% concentration	40 g / L	Comments
Stainless steels (304L, 316L)	✓	✓	< 1 mpy. No noticeable corrosion over 1 month
Copper Brass	20 – 50 mpy ⊖	< 20 mpy ⊖	Severe general corrosion, corrosion rate decreases with time.
Carbon steel	> 50 mpy ⊖	20 - 50 mpy ⊖	Several general corrosion, etching at welds.
Kynar® (PVDF)	✓	✓	No noticeable changes after 1 month exposure
FRP (fiber-reinforced plastic)	✓	✓	No noticeable changes after 1 month exposure
Concrete	Weight gain, bleached appearance	Weight gain (5 – 10%), bleached appearance	Increasing weight gain over time. Some dissolution observed as residue in test chamber.
Natural Rubber	Slight weight gain	Slight weight gain	
Synthetic rubber (neoprene)	Slight weight gain	Slight weight gain	

Table 4: Results for high pH activate Klozur® Persulfate Solutions, 20 wt% and 40 g / L at room temperature after 1 month exposure time

mpy – milli-inches per year; ✓ - compatible material, ⊖ - non-compatible material

Material	20 wt% concentration	40 g / L	Comments
Stainless steels (304L, 316L)	✓	✓	< 1 mpy. No noticeable corrosion over 1 month
Copper Brass	✓	✓	Negligible general corrosion (< 2 mpy). Black film formation observed.
Carbon steel	✓	✓	Negligible general corrosion (< 2 mpy). Isolated rust spots observed
Concrete	Weight gain, bleached appearance	Weight gain (5 – 10%), bleached appearance	Bleached appearance, increasing weight gain over time, some dissolution observed as residue in test container.

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Environmental Solutions

Material Compatibility

Recommend and Compatible Materials:

- Butyl rubber
- EPDM
- FRP (fiber reinforced plastic)
- Glass
- Neoprene
- Plexiglas®
- Polyethylene
- PVC
- Stainless steel (304L and 316L) for all mixing, conveyance and storage equipment
- Teflon®
- Viton

Incompatible Materials

- Aluminum
- Carbon steel
- Galvanized pipe
- Monel
- Nitrile rubbers
- Brass
- Copper
- Iron
- Nickel

Well Construction

- Use compatible materials, such as PVC or Stainless Steel (304L, 316L)

Pumps

- Check compatibility of all seals, gaskets, tubing and hoses

Geoprobe® Rods

- Threaded joints of rods are very susceptible to corrosion. To help reduce corrosion, several practical measures can be taken, such as applying a barrier layer like Loctite® or Teflon® grease to the threads, or utilizing the High pH activation system to reduce acidic corrosion.

Subsurface Utilities

- Always check for location and compatibility of subsurface utilities.

Hosing

- Klozur® persulfate solutions: 20 – 40%, neutral to mildly acidic conditions, moderate to low pressure

Master-Flex 300 EPDM or Equivalent

Specs (diameter)	Max Allowable Working Pressure (PSI)
1"	80
2"	60
3"	50
4"	45
6"	35

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- – 30 F to +140 F
- EPDM black inner liner of hosing with polyethylene helix
- Reinforced and a Type G (PVC) cover
- Medium oil resistance

- Klozur® persulfate solutions: 20 – 40%, mildly acidic conditions, high pressure

  Alfagomma (Italian Company)
  - Model T 505 4-4 SP
  - 6 BAF (240 PSI)
  - XLPE chemical S&D

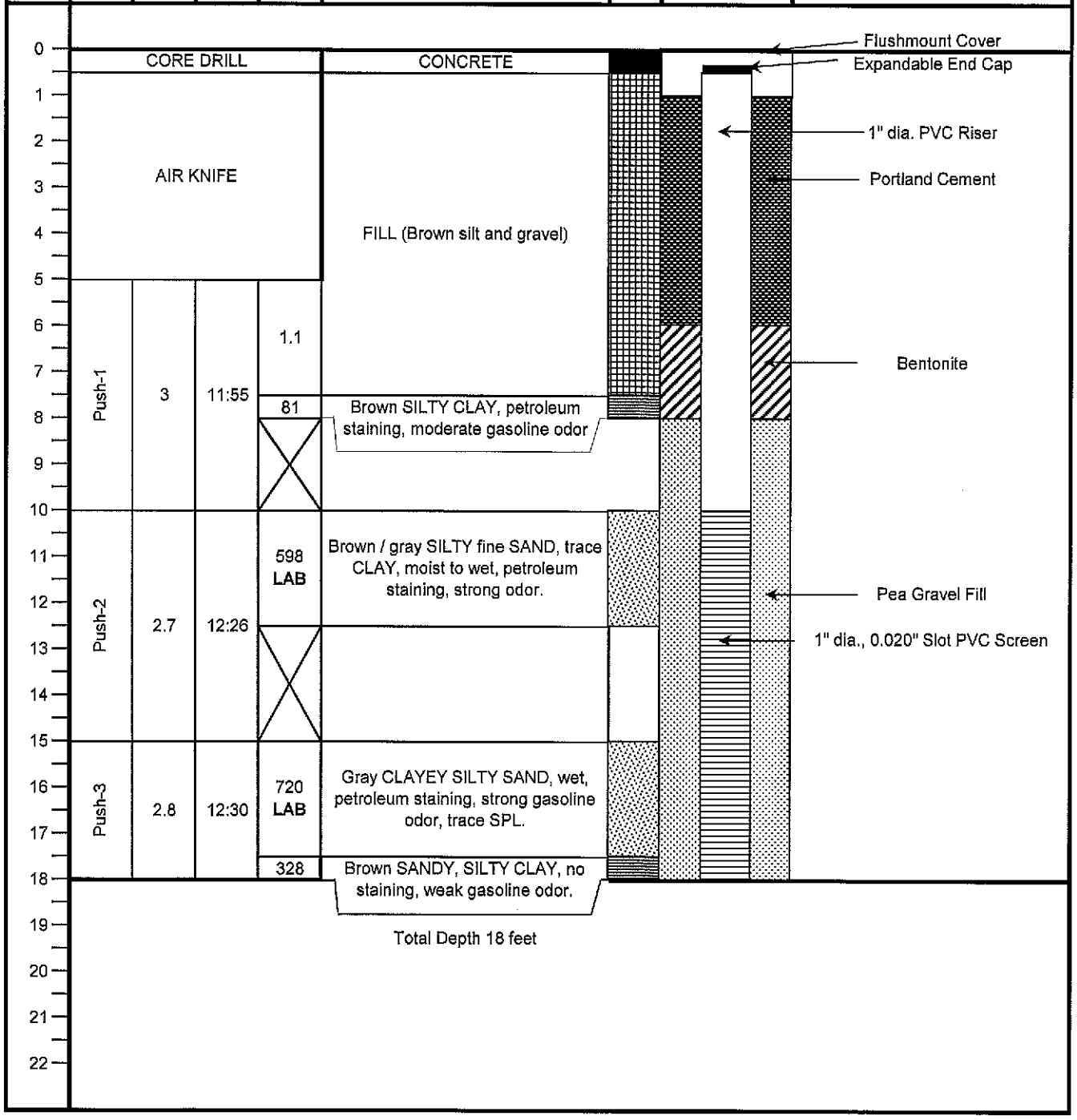
  Transporter Ultrachem (brand name)
  - 250 PSI water pressure

- Fittings

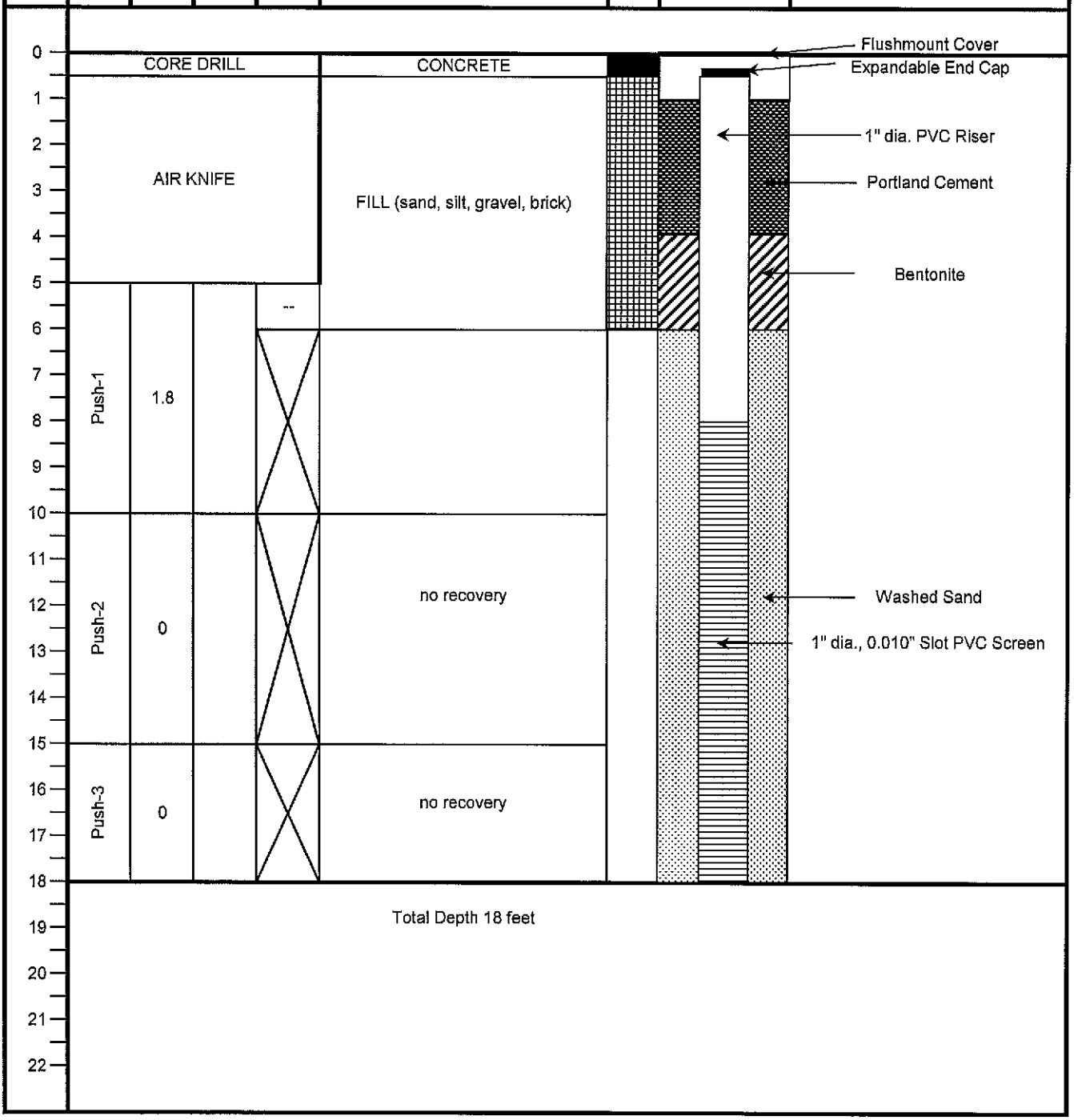
  304 Stainless – Schedule 40
  CPVC – Schedule 80 preferred (could lose strength when heated)
  PVC (may become embrittled with continued use)

Although the above information accurately reflects the results of the tests performed, FMC makes no warranty or representation, expressed or inferred, and nothing herein should be construed as to guaranteeing actual results in field use, or permission or recommendation to infringe any patent. No agent, representative or employee of this company is authorized to vary any of the terms of this notice.

Project: **Arch Street**	Boring/Well ID: **IP-1**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 18 feet Date Started: 06/05/2012 Date Completed: 06/05/2012	Well Construction Depth of Well 18 feet Diameter of Casing 1" Well Screen Slot: 0.020" Length: 8 feet



Project: **Arch Street**	Boring/Well ID: **PT-2N**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 18 feet Date Started: 06/05/2012 Date Completed: 06/05/2012	Well Construction Depth of Well 18 feet Diameter of Casing 1" Well Screen Slot: 0.010" Length: 10 feet



Project: **Arch Street**	Boring/Well ID: **PT-2S**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 19 feet Date Started: 06/06/2012 Date Completed: 06/06/2012	Well Construction Depth of Well 19 feet Diameter of Casing 1" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	CORE DRILL				CONCRETE			Expandable End Cap
1								
2								
3	AIR KNIFE							1" dia. PVC Riser
4								Portland Cement
5								
6				14.8	Brown SILTY CLAY, medium stiff to stiff, some petroleum staining, weak gasoline odor.			Bentonite
7	Push-1	4.5	11:05					
8				7.4				
9					CLAYEY SAND, weak gasoline odor.			
10								
11				784 LAB	Brown fine SAND and CLAYEY fine SAND, moist, wet at tip, petroleum staining, moderate gasoline odor.			
12	Push-2	3.9	11:10					
13				788 LAB				Washed Sand
14								1" dia., 0.010" Slot PVC Screen
15					Gray CLAYEY fine SAND, wet, flowing, trace SPL, strong odor.			
16				808 LAB				
17	Push-3	4.0	11:15		Gray, CLAYEY SANDY SILT, soft, wet.			
18				243				
19					Brown SILTY SANDY CLAY, very moist, weak odor.			
20					Total Depth 19 feet			
21								
22								

Project: **Arch Street**	Boring/Well ID: **PT-4N**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 19 feet Date Started: 06/06/2012 Date Completed: 06/06/2012	Well Construction Depth of Well 19 feet Diameter of Casing 1" Well Screen Slot: 0.010" Length: 10 feet

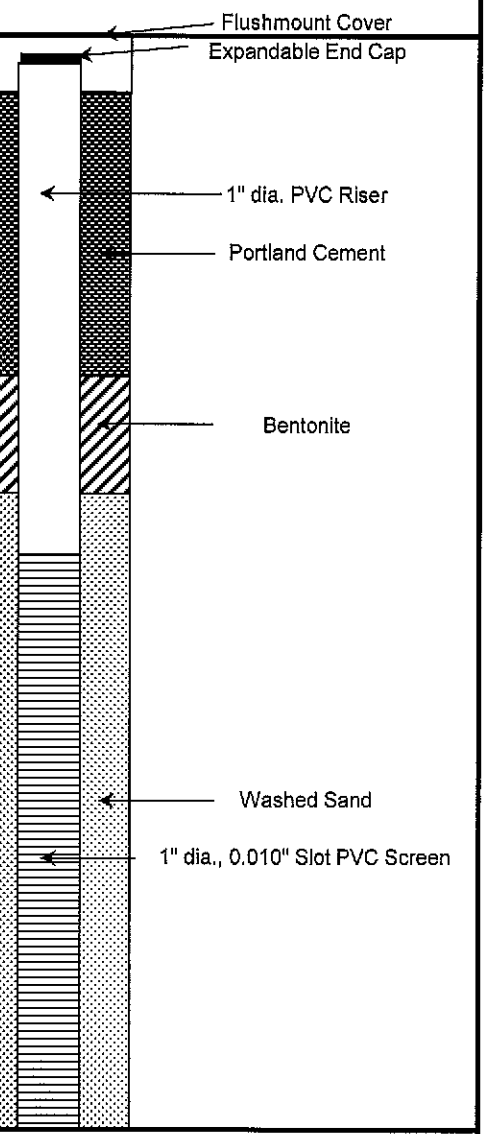
Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	CORE DRILL				CONCRETE			Expandable End Cap
1								
2								
3	AIR KNIFE				FILL (clay, gravel, brick, etc.), damp.			1" dia. PVC Riser
4								Portland Cement
5								
6				--				
7	Push-1	1.6	8:45	5.9	SILTY CLAY, stained, gasoline odor.			Bentonite
8								
9								
10								
11				2052 LAB	Gray CLAYEY SAND and SANDY SILTY CLAY, medium stiff, petroleum staining, moderate to strong gasoline odor.			
12	Push-2	3.8	8:52	1719				
13								Washed Sand
14				--				1" dia., 0.010" Slot PVC Screen
15								
16				2996 LAB	Gray SANDY CLAY with pockets of fine SAND, wet, petroleum staining.			
17	Push-3	2.6	9:00	90	Brown CLAY, wet.			
18								
19								
20					Total Depth 19 feet			
21								
22								

Project: **Arch Street**	Boring/Well ID: **PT-4S**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 20 feet Date Started: 06/05/2012 Date Completed: 06/05/2012	Well Construction Depth of Well 19.5 feet Diameter of Casing 1" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	CORE DRILL				CONCRETE			Expandable End Cap
1								
2								
3	AIR KNIFE							1" dia. PVC Riser
4								Portland Cement
5								
6				17	Brown SILTY CLAY, medium stiff, moist, some petroleum staining. Very stiff from 8.2 to 8.7 feet.			Bentonite
7	Push-1	4.7						
8				39				
9					Brown, fine SILTY SAND, moist to wet, some petroleum staining, weak gasoline odor.			
10								
11				719 LAB	Very fine SILTY SAND with some CLAYEY zones, moist to wet, black petroleum staining throughout, strong gasoline odor.			
12	Push-2	4.6						
13				608 LAB				Washed Sand
14								1" dia., 0.010" Slot PVC Screen
15								
16				929 LAB	Gray fine SAND, wet, flowing, trace SPL, petroleum staining, strong gasoline odor.			
17	Push-3	4.6						
18				240	Brown SANDY SILT.			
19								
				854	Brown SILTY CLAY			
20					SAND & GRAVEL, wet, black staining, gasoline odor.			Bentonite
21					Total Depth 20 feet			
22								

Project: **Arch Street**	Boring/Well ID: **PT-8N**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 19 feet Date Started: 06/05/2012 Date Completed: 06/05/2012	Well Construction Depth of Well 19 feet Diameter of Casing 1" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology
0						
	CORE DRILL				CONCRETE	
1						
2						
3	AIR KNIFE				FILL	
4						
5				--		
6				57	Gray CLAY, medium stiff, moist, petroleum staining, moderate to strong gasoline odor.	
7	Push-1	2.2	15:25			
8						
9						
10						
11				1018 LAB		
12	Push-2	4.4	15:30		Gray CLAYEY fine SAND with pockets of CLAY, petroleum staining, strong gasoline odor.	
13						
14				787 LAB		
15						
16				719 LAB	Gray CLAYEY SAND, petroleum staining, strong gasoline odor.	
17	Push-3	3.7	15:35	39	Brown SANDY CLAY, no staining, weak petroleum odor.	
18				52	Brown SANDY CLAY and CLAYEY SAND, no staining, weak petroleum odor.	
19					Mottled CLAY, hard, no odor.	
20					Total Depth 19 feet	
21						
22						



Project: **Arch Street**	Boring/Well ID: **PT-8S**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 20 feet Date Started: 06/05/2012 Date Completed: 06/05/2012	Well Construction Depth of Well 20 feet Diameter of Casing 1" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	CORE DRILL				CONCRETE			Expandable End Cap
1								
2								
3	AIR KNIFE							1" dia. PVC Riser
4								Portland Cement
5								
6				20				
7	Push-1	4.4	9:10		Brown SILTY CLAY, medium stiff to stiff, moist, weak gasoline odor.			Bentonite
8								
9				19.5	Very fine SAND, moist to wet, gasoline odor.			
10								
11				1782 LAB				
12	Push-2	4.2	9:15		Gray CLAYEY fine SAND, very moist to wet, petroleum staining, moderate gasoline odor.			
13								Washed Sand
14				1606 LAB				1" dia., 0.010" Slot PVC Screen
15								
16				1864 LAB	Gray CLAYEY fine SAND, wet, trace SPL, petroleum staining, strong gasoline odor.			
17	Push-3	2.3	9:20	128	Brown SANDY SILT, weak odor, CLAYEY at tip			
18								
19								
20								
21	Total Depth 20 feet							
22								

Project: **Arch Street**	Boring/Well ID: **MW-8**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 22 feet Date Started: 06/06/2012 Date Completed: 06/06/2012	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	HAMMER DRILL				CONCRETE			Expandable End Cap
1								
2								
3	Push to 5 feet, then begin sampling.							2" dia. PVC Riser
4								
5								
6								Portland Cement
7	Push-1	5	1435	3	Brown SILTY CLAY, medium stiff, damp. Becomes SANDY from 8.8 to 9 feet. No petroleum odor or staining.			
8								
9				21	Layers of brown CLAYEY SAND, gray SILTY SAND, and brown SILTY CLAY, wet. Some staining, no odor.			Bentonite
10					SAND & GRAVEL 10.0 to 10.2 feet.			
11								
12	Push-2	3.3	1440	1330 LAB				
13					Gray CLAYEY SILTY SAND, wet, Petroleum staining, strong gasoline odor.			
14				X				
15								Washed Sand
16				915				2" dia., 0.010" Slot PVC Screen
17	Push-3	5	1445		Brown SANDY CLAY, faint gasoline odor.			
18				63	Gray CLAYEY SAND, wet, flowing sand, faint gasoline odor.			
19					Brown CLAY, medium stiff, no odor.			
20								
21	AUGER				CLAYEY SAND & fine GRAVEL.			
22								
	Total Depth 22 feet							

Project: **Arch Street**	Boring/Well ID: **MW-9**	Page 1 of 1
Location: Kittanning, PA Drilling Co.: A-Zone Driller: Eric & Scott Logged By: Paul & Jen	Depth of Boring 22 feet Date Started: 06/07/2012 Date Completed: 06/07/2012	Well Construction Depth of Well 22 feet Diameter of Casing 2" Well Screen Slot: 0.010" Length: 10 feet

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION	Lithology	Well Construction	Comments/Details
0								Flushmount Cover
	HAMMER DRILL				CONCRETE			Expandable End Cap
1	Push-1	2.5	10:04		FILL (clay, silt, wood debris, coal)			
2								
3				3.2	Layers of gray CLAY and SILTY SAND, petroleum staining and odors.			2" dia. PVC Riser
4								
5								
6	Push-2	3.9	10:12	1.3	Light brown CLAY, stiff, moist. Medium stiff zones with petroleum staining and faint odor from 6.0 to 6.5 feet and 8.0 to 8.5 feet.			Portland Cement
7								
8				7.1				
9					SANDY CLAY, petrolum staining and moderate odors.			Bentonite
10								
11	Push-3	2.6	10:17	1601 **LAB**	Layers of gray SAND and SANDY CLAY, moist to wet. Petroleum staining and odor strongest in sand layers.			
12								
13								
14								
15	Push-4	4	10:22					
16				354	Gray CLAYEY SILTY SAND, wet, flowing, petroleum staining and strong odor.			Washed Sand
17								2" dia., 0.010" Slot PVC Screen
18				--	Brown CLAYEY SILTY SAND, wet. No odor, no staining.			
19					Orange SANDY CLAY, trace gravel, wet.			
					SAND & fine GRAVEL, subrounded, wet.			
20								
21	AUGER							
22								
					Total Depth 22 feet			

Boring ID: PT-8N

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen
Depth of Boring: 19 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0	CORE DRILL				CONCRETE
1–5	AIR KNIFE				FILL
5–6	Push-1	2.2	15:25	--	
6–7				57	Gray CLAY, medium stiff, moist, petroleum staining, moderate to strong gasoline odor.
7–10					
10–11	Push-2	4.4	15:30	1018 LAB	Gray CLAYEY fine SAND with pockets of CLAY, petroleum staining, strong gasoline odor.
11–14				787 LAB	
14–15	Push-3	3.7	15:35	719 LAB	Gray CLAYEY SAND, petroleum staining, strong gasoline odor.
15–16				39	Brown SANDY CLAY, no staining, weak petroleum odor.
16–18				52	Brown SANDY CLAY and CLAYEY SAND, no staining, weak petroleum odor.
18–19					Mottled CLAY, hard, no odor.
19–22					Total Depth 19 feet

Boring ID: SB-8N

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen
Depth of Boring: 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0	CORE DRILL				CONCRETE
1–5	AIR KNIFE				
5–10	Drive to 10', then begin sampling.				
10–11	Push-1	4.2	13:30	857 LAB	Gray CLAYEY fine SAND with pockets of CLAY, petroleum staining, strong gasoline odor.
11–14				790 LAB	
14–15					
15–16	Push-2	4.0	13:35	692 LAB	Gray CLAYEY, SILTY SAND, very wet, flowing, gasoline odor.
16–18				NS	Brown CLAYEY, SILTY SAND, very wet, flowing, weak gasoline odor.
18–19					Orange CLAY, stiff, no petro odor.
19–20					Black SAND & GRAVEL, gasoline odor.
20–22					Total Depth 20 feet

Boring ID: PT-4N

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring: 19 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE — FILL (clay, gravel, brick, etc.), damp.
6	Push-1	1.6	8:45	--	
7				5.9	SILTY CLAY, stained, gasoline odor.
7–10					
11	Push-2	3.8	8:52	2052 **LAB**	Gray CLAYEY SAND and SANDY SILTY CLAY, medium stiff, petroleum staining, moderate to strong gasoline odor.
12–13				1719	
14				--	
15	Push-3	2.6	9:00	2996 **LAB**	Gray SANDY CLAY with pockets of fine SAND, wet, petroleum staining.
17				90	Brown CLAY, wet.
18–19					
20					Total Depth 19 feet
21–22					

Boring ID: SB-4N

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring: 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE
6–10					Drive to 10', then begin sampling.
11	Push-1	3.5	13:10	857 **LAB**	Gray CLAYEY SAND and SANDY SILTY CLAY, medium stiff, petroleum staining, moderate to strong gasoline odor.
12–13				NS	
14					
15	Push-2	4.6	13:15	1025 **LAB**	Gray CLAYEY SILTY fine SAND, adhesive, wet, strong gadoline odor.
17–18				NS	Brown CLAYEY SILTY fine SAND, weak odor.
19					Orange CLAY, stiff.
19					Black SAND & GRAVEL.
20					Total Depth 20 feet
21–22					

Boring ID: IP-1

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring 18 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE / FILL (Brown silt and gravel)
5–10	Push-1	3	11:55	1.1	
7–8				81	Brown SILTY CLAY, petroleum staining, moderate gasoline odor
10–15	Push-2	2.7	12:26	598 LAB	Brown / gray SILTY fine SAND, trace CLAY, moist to wet, petroleum staining, strong odor.
15–18	Push-3	2.8	12:30	720 LAB	Gray CLAYEY SILTY SAND, wet, petroleum staining, strong gasoline odor, trace separate phase liquid.
18				328	Brown SANDY, SILTY CLAY, no staining, weak gasoline odor.
18–22					Total Depth 18 feet

Boring ID: SB-1N

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE
5–10					Drive to 10', then begin sampling.
10–15	Push-2	3.7	12:50	384 LAB	Black & gray SILTY fine SAND, medium dense, petroluem staining, strong odor.
15–18	Push-3	4.4	12:55	773 LAB	Black & gray CLAYEY SILTY SAND, wet, petroleum staining, strong gasoline odor, trace separate phase liquid.
				NS	Brown SANDY, SILTY CLAY, wet, no staining, weak odor.
					Orange CLAY, stiff, moist, no odor.
20					Black SAND & GRAVEL, coarse sand, rounded gravel, moderate odor.
20–22					Total Depth 20 feet

Boring ID: IP-1

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring 18 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery - feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE — FILL (Brown silt and gravel)
5–10	Push-1	3	11:55	1.1	
8				81	Brown SILTY CLAY, petroleum staining, moderate gasoline odor
10–12	Push-2	2.7	12:26	598 LAB	Brown / gray SILTY fine SAND, trace CLAY, moist to wet, petroleum staining, strong odor.
12–15					
15–17	Push-3	2.8	12:30	720 LAB	Gray CLAYEY SILTY SAND, wet, petroleum staining, strong gasoline odor, trace separate phase liquid.
17–18				328	Brown SANDY, SILTY CLAY, no staining, weak gasoline odor.
18					Total Depth 18 feet
19–22					

Boring ID: SB-1S

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery - feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE
5–10					Drive to 10', then begin sampling.
10–12	Push-2	3.6	12:25	502 LAB	Brown / gray SILTY fine SAND, trace CLAY, moist to wet, petroleum staining, strong odor.
12–15				356	
15–17	Push-3	4	12:30	831 LAB	Gray CLAYEY SILTY SAND, wet, petroleum staining, strong gasoline odor, trace separate phase liquid.
17–18				NS	Brown SANDY, SILTY CLAY, wet, no staining, weak odor.
18					White SANDSTONE fragments.
19					Black SAND & GRAVEL, wet, moderate odor.
20					Total Depth 20 feet
21–22					

Boring ID: PT-2S

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring 19 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0	CORE DRILL				CONCRETE
1–5	AIR KNIFE				
5–10	Push-1	4.5	11:05	14.8	Brown SILTY CLAY, medium stiff to stiff, some petroleum staining, weak gasoline odor.
				7.4	CLAYEY SAND, weak gasoline odor.
10–15	Push-2	3.9	11:10	784 **LAB**	Brown fine SAND and CLAYEY fine SAND, moist, wet at tip, petroleum staining, moderate gasoline odor.
				788 **LAB**	
				X	
15–19	Push-3	4.0	11:15	808 **LAB**	Gray CLAYEY fine SAND, wet, flowing, trace SPL, strong odor.
				243	Gray, CLAYEY SANDY SILT, soft, wet.
19					Brown SILTY SANDY CLAY, very moist, weak odor.
20					Total Depth 19 feet

Boring ID: SB-2S

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring 19 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0	CORE DRILL				CONCRETE
1–5	AIR KNIFE				
5–10	Push-1	3		859 **LAB**	Drive to 10', then begin sampling.
				795 **LAB**	Brown fine SAND and CLAYEY fine SAND, moist, wet at tip, petroleum staining, moderate gasoline odor.
				X	
15–19	Push-2	3.5		970 **LAB**	Gray CLAYEY fine SAND, wet, flowing, trace SPL, strong odor.
				NS	Gray, CLAYEY SANDY SILT, soft, wet.
					Orange CLAY, moist, no odor.
19				X	Sandstone at tip.
20					Total Depth 19 feet (Refusal)

Boring ID: PT-4S

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring 20 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL — CONCRETE
1–4					AIR KNIFE
5–10	Push-1	4.7		17	Brown SILTY CLAY, medium stiff, moist, some petroleum staining. Very stiff from 8.2 to 8.7 feet.
				39	Brown, fine SILTY SAND, moist to wet, some petroleum staining, weak gasoline odor.
10–15	Push-2	4.6		719 **LAB**	Very fine SILTY SAND with some CLAYEY zones, moist to wet, black petroleum staining throughout, strong gasoline odor.
				608 **LAB**	
15–20	Push-3	4.6		929 **LAB**	Gray fine SAND, wet, flowing, trace SPL, petroleum staining, strong gasoline odor.
				240	Brown SANDY SILT.
				854	Brown SILTY CLAY
					SAND & GRAVEL, wet, black staining, gasoline odor.
20–22					Total Depth 20 feet

Boring ID: SB-4S

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL — CONCRETE
1–4					AIR KNIFE
5–10					Drive to 10', then begin sampling.
10–15	Push-1	3.8	10:45	876 **LAB**	Very fine SILTY SAND with some CLAYEY zones, moist to wet, black petroleum staining throughout, strong gasoline odor.
				878 **LAB**	
15–20	Push-2	4.5	10:50	1173 **LAB**	Gray fine SAND, wet, flowing, trace SPL, petroleum staining, strong gasoline odor.
				139	Brown SANDY SILT, no petroleum odor.
					Brown SILTY CLAY.
				NS	SAND & GRAVEL, wet, black staining, gasoline odor.
20–22					Total Depth 20 feet

Boring ID: PT-8S

Location: Kittanning, PA | Depth of Boring 20 feet
Drilling Co.: A-Zone | Date Started: 06/05/2012
Driller: Eric & Scott | Date Completed: 06/05/2012
Logged By: Paul & Jen

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE
5–10	Push-1	4.4	9:10	20	Brown SILTY CLAY, medium stiff to stiff, moist, weak gasoline odor.
				19.5	Very fine SAND, moist to wet, gasoline odor.
10–15	Push-2	4.2	9:15	1782 LAB	Gray CLAYEY fine SAND, very moist to wet, petroleum staining, moderate gasoline odor.
				1606 LAB	
15–20	Push-3	2.3	9:20	1864 LAB	Gray CLAYEY fine SAND, wet, trace SPL, petroleum staining, strong gasoline odor.
				128	Brown SANDY SILT, weak odor, CLAYEY at tip
20–22					Total Depth 20 feet

Boring ID: SB-8S

Location: Kittanning, PA | Depth of Boring 20 feet
Drilling Co.: A-Zone | Date Started: 07/10/2012
Driller: Eric & Scott | Date Completed: 07/10/2012
Logged By: Jen

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1–5					AIR KNIFE
5–10					Drive to 10', then begin sampling.
10–15	Push-1	3.8	10:20	1263 LAB	Gray & brown CLAYEY fine SAND & SILT, medium dense (medium stiff), moist, moderate gasoline odor.
				1024 LAB	
15–20	Push-2	2.5	10:25	1274 LAB	Gray CLAYEY SILTY SAND, adhesive, wet, moderate to strong odor.
				NS	Brown & gray CLAYEY SAND, no odor. (SAND & GRAVEL at tip)
20–22					Total Depth 20 feet

Boring ID: MW-8

Location: Kittanning, PA | Depth of Boring 22 feet
Drilling Co.: A-Zone | Date Started: 06/05/2012
Driller: Eric & Scott | Date Completed: 06/05/2012
Logged By: Paul & Jen

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0	HAMMER DRILL				CONCRETE
1–5					Push to 5 feet, then begin sampling.
5–10	Push-1	5	1435	3	Brown SILTY CLAY, medium stiff, damp. Becomes SANDY from 8.8 to 9 feet. No petroleum odor or staining.
9–10				21	Layers of brown CLAYEY SAND, gray SILTY SAND, and brown SILTY CLAY, wet. Some staining, no odor.
10–15	Push-2	3.3	1440	1330 LAB	SAND & GRAVEL 10.0 to 10.2 feet. Gray CLAYEY SILTY SAND, wet, Petroleum staining, strong gasoline odor.
15–20	Push-3	5	1445	915	Gray CLAYEY SILTY SAND, wet, Petroleum staining, strong gasoline odor.
17–18					Brown SANDY CLAY, faint gasoline odor.
18–19				63	Gray CLAYEY SAND, wet, flowing sand, faint gasoline odor.
19–20					Brown CLAY, medium stiff, no odor.
20–22	AUGER				CLAYEY SAND & fine GRAVEL.
22					Total Depth 22 feet

Boring ID: SB-MW8

Location: Kittanning, PA | Depth of Boring 15 feet
Drilling Co.: A-Zone | Date Started: 07/10/2012
Driller: Eric & Scott | Date Completed: 07/10/2012
Logged By: Jen

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0	CORE DRILL				CONCRETE
1–5					AIR KNIFE
5–10					Drive to 10', then begin sampling.
10–15	Push-1	3	8:30	1729 LAB	Gray CLAYEY SILTY SAND, wet, petroleum staining, strong gasoline odor.
15					Total Depth 15 feet

Boring ID: P-2

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring 24 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					Concrete
1					
2					
3					
4					Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.
5	Push - 1	20"		10.8	FILL
6					Light gray SILTY CLAY, damp, medium-stiff to soft, some staining. Weak to moderate gasoline odor.
7					
8					
9	Push - 2	39"		180 LAB	
10					Gray SANDY CLAY, soft, damp, some staining. Moderate gasoline odor.
11					Gray-stained CLAYEY SAND, grades to fine sand, moist to wet. Gasoline odor. Trace free product.
12					
13	Push - 3	23"		140	
14					
15					
16					Gray-stained CLAYEY SAND & GRAVEL, fine to coarse gravel, very moist. Gasoline odor.
17	Push - 4	11"		260 LAB	
18					
19					
20					
21	Push - 5	23"		76	Gray-stained SAND & GRAVEL, fine to coarse gravel, wet. Moderate gasoline odor from 20 to 21 feet, no gasoline odor from 21 to 22 feet.
22				2	
23					
24					Total Depth 24 feet

Boring ID: SB-P2

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1					
2					
3					AIR KNIFE
4					
5					
6					Drive to 8', then begin sampling.
7					
8					
9	Push-1	1.8	9:55	38	Gray & brown SILTY CLAY, medium stiff, moist, weak gasoline odor.
10					
11	Push-2	3.7	10:00	1148 LAB	Gray & brown CLAYEY SILT & find SAND, black petroleum staining, moderate to strong gasoline odor.
12					
13				NS	
14					
15					
16	Push-3	3.9	10:05	937 LAB	Gray CLAYEY SILTY SAND, wet, moderate gasoline odor.
17				986	
18				65	Gray CLAYEY SILTY SAND, wet, flowing, weak gasoline odor.
19					SAND & GRAVEL at tip.
20					
21					Total Depth 20 feet
22					
23					
24					

Boring ID: P-3

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Paul & Jen

Depth of Boring 20 feet
Date Started: 06/05/2012
Date Completed: 06/05/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					Concrete
1					
2					
3					
4					Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.
5	Push - 1	4.0		0	Brown CLAY, stiff, damp. No odor, no staining.
6					
7					
8				0.25	
9	Push - 2	4.0			
10				4	Brown SANDY CLAY, moist. No odor, no staining.
11				180 **LAB**	Gray-stained CLAYEY SAND, very moist. Strong gasoline odor.
12					
13	Push - 3	1.3		130	Gray-stained SAND, some gravel, fine sand, wet. Gasoline odor.
14					
15				40	Brown SILTY CLAY, wet. No odor, no staining.
16				190 **LAB**	Gray-stained SAND, fine, wet. Gasoline odor.
17	Push - 4	4.0		90	Brown SILTY SAND, fine, wet. No odor.
18					
19				5	Gray-stained SAND, fine, wet. Strong gasoline odor.
20				4 **LAB**	Brown SAND & GRAVEL, dense. No odor, no
21					Total Depth 20 feet
22					
23					
24					

Boring ID: SB-P3

Location: Kittanning, PA
Drilling Co.: A-Zone
Driller: Eric & Scott
Logged By: Jen

Depth of Boring 20 feet
Date Started: 07/10/2012
Date Completed: 07/10/2012

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1					
2					
3					AIR KNIFE
4					
5					
6					Drive to 10', then begin sampling.
7					
8					
9					
10				NS	
11				1451 **LAB**	Black-stained SILTY CLAYEY SAND.
12	Push-1	3.4	8:50	NS	
13					
14					
15				1543 **LAB**	Gray CLAYEY SAND, wet, strong gasoline odor.
16				87	Brown SILTY SAND, no odor.
17		4.0	9:00		
18				68	Gray CLAYEY SILTY SAND, wet, no odor.
19					
20					
21					Total Depth 20 feet
22					
23					
24					

Boring ID: P-4

Location: Kittanning, PA | Depth of Boring 24 feet
Drilling Co.: A-Zone | Date Started: 06/05/2012
Driller: Eric & Scott | Date Completed: 06/05/2012
Logged By: Paul & Jen

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					Concrete
1	Vaxcavate / Air Knife to 5 feet and backfill. Begin Macrocore sampling at 4 feet.				
2					
3					
4					
5	Push - 1	1.7		3.8	GRAVEL (Fill).
6					
7					Brown CLAY, stiff, damp. No odor, no staining.
8					
9	Push - 2	3.2		26	
10					Brown and gray-stained SANDY CLAY, grades to fine SAND, moist to very moist. Weak to moderate gasoline odor.
11				94 **LAB**	
12	Push - 3	2.3		30	Fine GRAVEL, moist, no odor, no staining.
13					
14					
15				152	Gray SAND, fine, moist. Gasoline odor.
16	Push - 4	2.0		220 **LAB**	SAND & GRAVEL, moist. No odor, no staining.
17					
18				152	Gray SAND, fine, moist. Moderate gasoline odor.
19					
20					
21	Push - 5	1.7		164 **LAB**	Gray SAND & GRAVEL, wet. Gasoline odor. Trace free product at 22 feet.
22					
23				54	Brown SAND & GRAVEL, clean, wet. No odor, no staining.
24					Total Depth 24 feet

Boring ID: SB-P4

Location: Kittanning, PA | Depth of Boring 23 feet
Drilling Co.: A-Zone | Date Started: 07/10/2012
Driller: Eric & Scott | Date Completed: 07/10/2012
Logged By: Jen

Depth (feet)	Sample No/type	Recovery- feet	Time	PID Reading-ppm	DESCRIPTION
0					CORE DRILL / CONCRETE
1					
2					
3					AIR KNIFE
4					
5					
6					Drive to 10', then begin sampling.
7					
8					
9					
10					
11	Push-1	3.0	9:20	1900 **LAB**	Gray & black SILTY SAND, strong gasoline odor.
12				NS	
13					
14					
15				1750 **LAB**	Gray SILTY SAND, moist to wet, strong gasoline odor.
16	Push-2	4.6	9:25	92	Gray & brown SILTY CLAYEY fine SAND, wet, flowing, no petroleum odor.
17					
18				NS	
19				NS	Gray & brown SAND & GRAVEL, no odor.
20					
21	Push-3	1.8	9:30	8.5 **LAB**	Brown SAND & GRAVEL, dense, wet, some gray petroleum staining, weak gasoline odor.
22					
23					
24					Total Depth 23 feet

ATTACHMENT J

DPVE Pilot Test Summary
March 18-19, 2014

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201

		IW-1	MW-8
Well Screen Interval	*feet*	10 - 20'	12 - 22'
Duration		7 hrs 24 min	7 hrs 10 min
Average Vacuum (measured at air/water separator)	*inches Hg*	20.4	20.4
Average Vacuum (measured at drop pipe)	*inches Hg*	17.0	18.0
Average Vacuum (measured at well head)	*inches Hg*	19.4	17.1
Average Air Flow Rate	*scfm*	6.8 (4.4 sustained)	4.5
Average Liquid Flow Rate	*gpm*	0.84	0.10
Average PID Reading	*ppm*	416	489
Average Contaminant (BTEX) Concentration in Air	*mg/m3*	402	1,001
Average Contaminant (TPH-GRO) Concentration in Air	*mg/m3*	60,000	81,500
Average Contaminant (all unleaded gasoline parameters) Concentration in Water	*ug/L*	4,138	4,149
Radius of Groundwater Drawdown	*feet*	63	14
Radius of Vacuum Influence	*feet*	63	64
Contaminant (BTEX + MTBE) Mass Removal Rate (Air)	*pounds per day*	0.16	0.40
Contaminant (TPH-GRO) Mass Removal Rate (Air)	*pounds per day*	23.7	33.0
Contaminant Mass Removal Rate (Groundwater)	*pounds per day*	0.42	0.050
TOTAL	*pounds per day*	24.31	33.42

Analytical Results

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
March 18-19, 2014

Groundwater Influent

Sample ID	Date	Time	Parameters (ug/L)							
			Benzene	Ethyl-benzene	Cumene	MTBE	Naph-thalene	Toluene	Xylenes (total)	TOTAL
SHS-RUA			*5*	*700*	*1,100*	*20*	*100*	*1,000*	*10,000*	--
IW-1A	03/18/14	11:15	**640**	**840**	83	<10	**820**	54	4,000	**6437**
IW-1B	03/18/14	12:39	**620**	620	32	15	**250**	42	1,900	**3479**
IW-1C	03/18/14	14:34	**590**	610	30	<1.0	**250**	39	1,700	**3219**
IW-1D	03/18/14	17:43	**620**	680	35	10	**230**	43	1,800	**3418**
									average	**4138.25**
MW-8A	03/19/14	10:23	**860**	630	29	**24**	**270**	100	2,400	**4313**
MW-8B	03/19/14	13:15	**1,000**	600	28	17	**210**	110	2,100	**4065**
MW-8C	03/19/14	14:58	**960**	590	26	13	**180**	100	2,200	**4069**
									average	**4149.00**

Air Influent

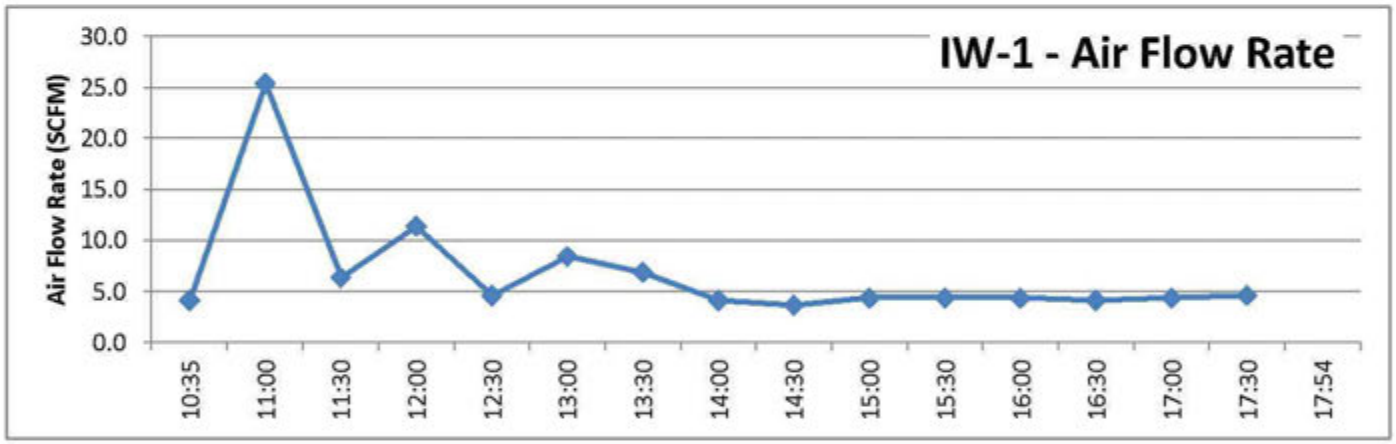
Sample ID	Date	Time	Parameters (mg/m3)								
			Benzene	Toluene	Ethyl-benzene	m&p-Xylene	o-Xylene	(total Xylene)	MTBE	TPH-GRO	TOTAL BTEX
Non-Residential MSC $_{IAQ}$:			*0.011*	*1.2*	*0.073*	--	--	*0.3*	*0.31*	--	--
Non-Residential MSC $_{SG}$:			*1.1*	*120*	*7.3*	--	--	*30*	*31*	--	--
Residential MSC $_{IAQ}$:			*0.0027*	*0.56*	*0.019*	--	--	*0.14*	*0.081*	--	--
Residential MSC $_{SG}$:			***0.27***	***56***	***1.9***	--	--	***14***	***8.1***	--	--
IW-1A	03/18/14	11:03	**77**	6.8	**65**	180	27	**207**	<1.4	62,000	355.80
IW-1B	03/18/14	12:35	**110**	9.4	**110**	210	28	**238**	<1.4	70,000	467.40
IW-1C	03/18/14	14:32	**120**	12	**110**	200	26	**226**	<2.9	50,000	468.00
IW-1D	03/18/14	17:39	**80**	8.3	**82**	130	16	**146**	<2.9	58,000	316.30
									Averages:	**60,000**	**401.88**
MW-8A	03/18/14	8:36	**480**	49	**260**	520	100	**620**	<2.9	91,000	1409.00
MW-8B	03/18/14	10:18	**350**	45	**180**	380	69	**449**	<5.8	74,000	1024.00
MW-8C	03/18/14	13:08	**350**	36	**170**	360	69	**429**	<2.9	74,000	985.00
MW-8D	03/18/14	14:55	**190**	22	**100**	230	43	**273**	<2.9	87,000	585.00
									Averages:	**81,500**	**1000.75**

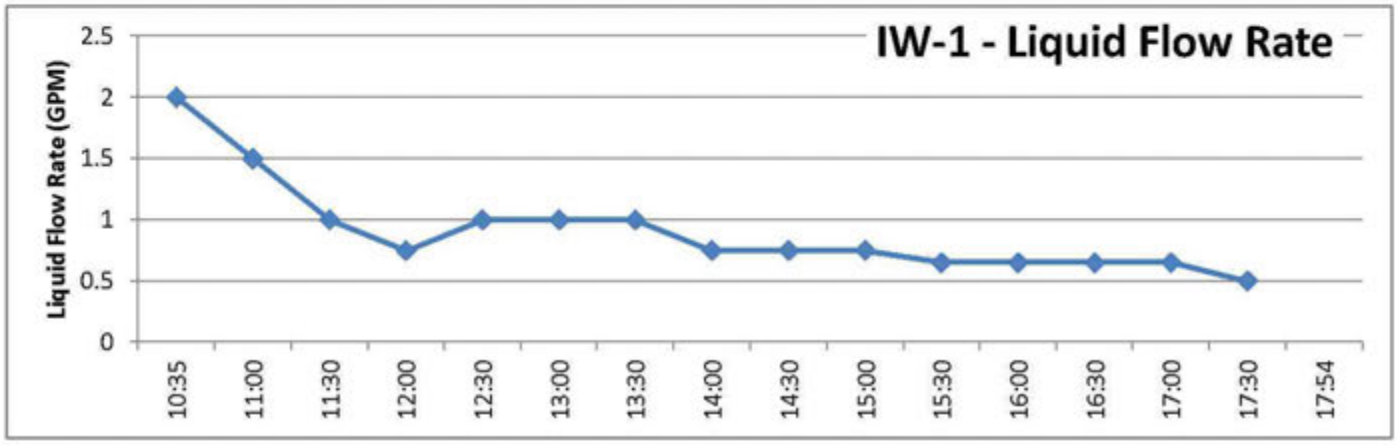
IW-1 Operational Data

DPVE Duration: 7 hours 24 minutes
Sustained Air Flow Rate: 4.4 scfm
Liquid Flow Rate: 2 to 0.5 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/18/2014

Time	Vacuum (system)	Vacuum (drop pipe)	Vacuum (well head)	Air Flow	Temp	Air Flow	PID	Liquid flow	Total Liquid	GW Contam. Conc.	Air BTEX Conc.	Air TPH-GRO Conc.
	inches HG	inches HG	inches HG	CFM	deg F	SCFM	ppm	gpm	gallons	ug/L	mg/m3	mg/m3
10:30	START											
10:35	25			29	43	4.1	269	2	0			
11:00	17			59	35	25.4	290	1.5	52	6,437	355.8	62,000
11:30	17	15	16.5	15	40	6.4		1	89			
12:00	17	17	18.5	27	43	11.4		0.75	115			
12:30	18	13.5	18.5	12	46	4.6	382	1	141	3,479	467.4	70,000
13:00	18	18	19	22	48	8.5	402	1	171			
13:30	18	18	20	18	49	6.9	401	1	201			
14:00	22	18	19.5	17	49	4.2	351	0.75	227			
14:30	22	18	19	15	50	3.7	387	0.75	248	3,219	468	50,000
15:00	22	18	21	18	52	4.4	371	0.75	271			
15:30	22	17	19.5	18	53	4.4	662	0.65	292			
16:00	22	17	18	18	52	4.4	410	0.65	312			
16:30	22	18	21	17	51	4.2	498	0.65	333			
17:00	22	17	21	18	50	4.4	482	0.65	354			
17:30	22	17	21	19	49	4.7	508	0.5	375	3,418	316.3	58,000
17:54	END											
Averages:	**20.4**	**17.0**	**19.4**			**6.8**	**416.4**					



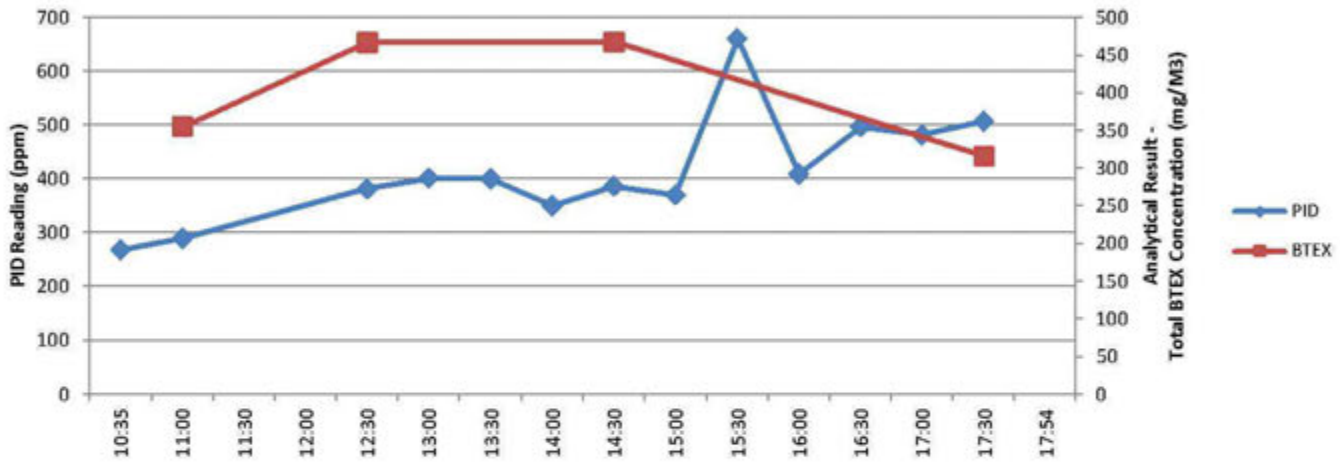


IW-1 Operational Data

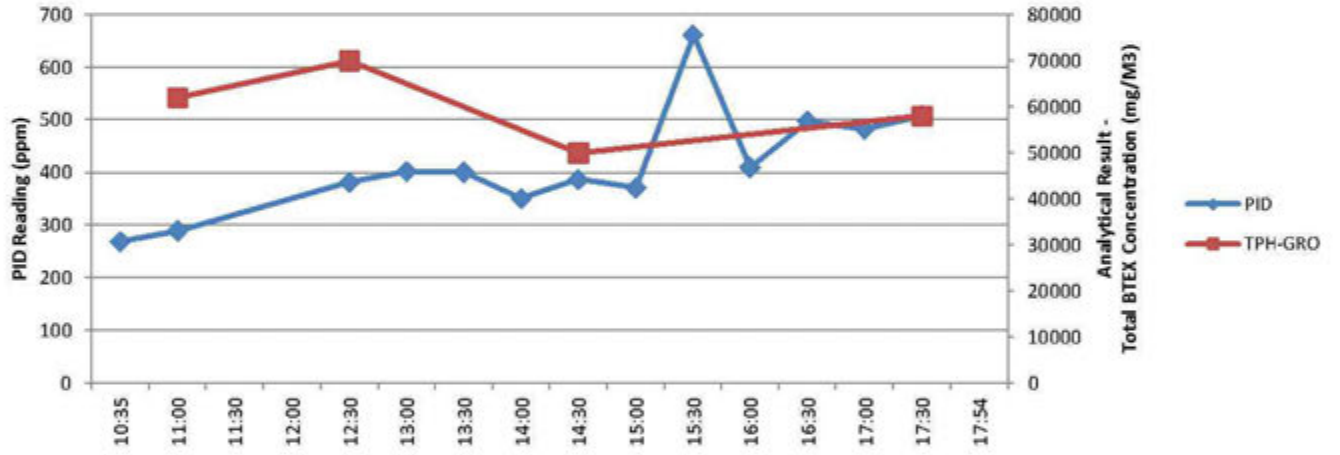
DPVE Duration: 7 hours 24 minutes
Sustained Air Flow Rate: 4.4 scfm
Liquid Flow Rate: 2 to 0.5 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/18/2014

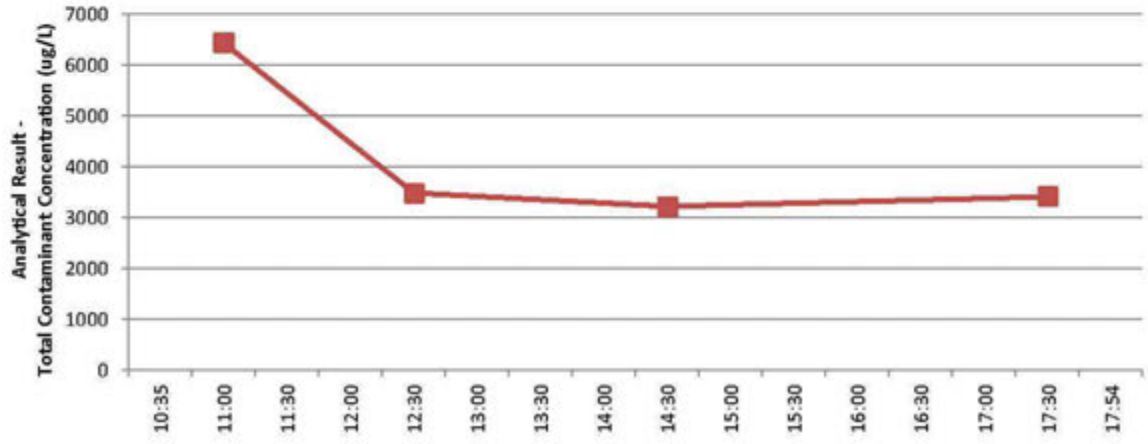
IW-1 - PID Readings & Air Analytical Results (BTEX)



IW-1 - PID Readings & Air Analytical Results (TPH-GRO)



IW-1 - Groundwater Analytical Results



IW-1 Operational Data

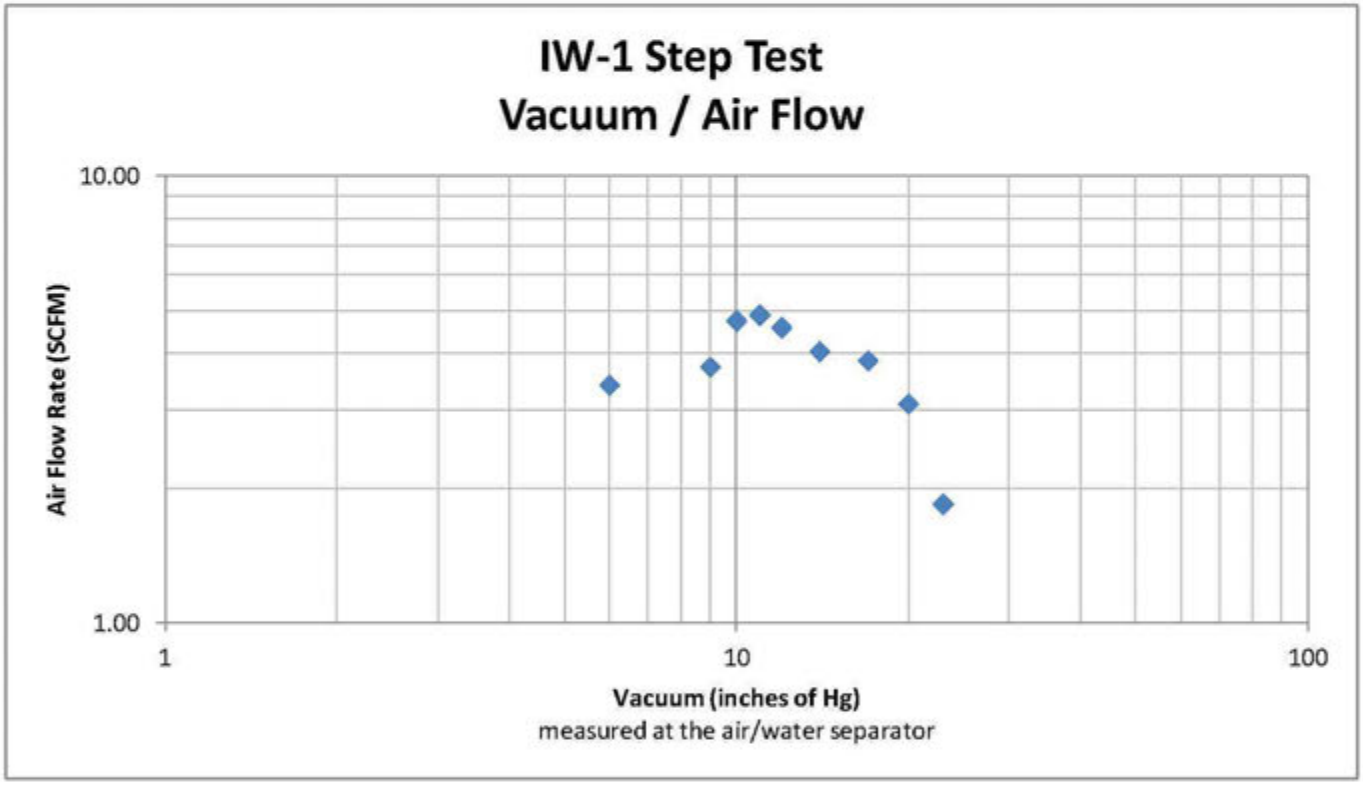
DPVE Duration: 7 hours 24 minutes
Sustained Air Flow Rate: 4.4 scfm
Liquid Flow Rate: 2 to 0.5 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/18/2014

IW-1 Step Test

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/18/2014

Time	Vacuum (system) inches HG	Air Flow CFM	Temp deg F	Air Flow SCFM
17:54	START			
18:00	6	4.26	49	3.41
18:05	9	5.37	49	3.74
18:10	11	7.8	49	4.89
18:15	14	7.75	49	4.05
18:20	17	9.22	48	3.87
18:25	20	9.79	47	3.09
18:30	23	8.76	48	1.85
18:35	12	7.71	47	4.58
18:40	10	7.15	47	4.75

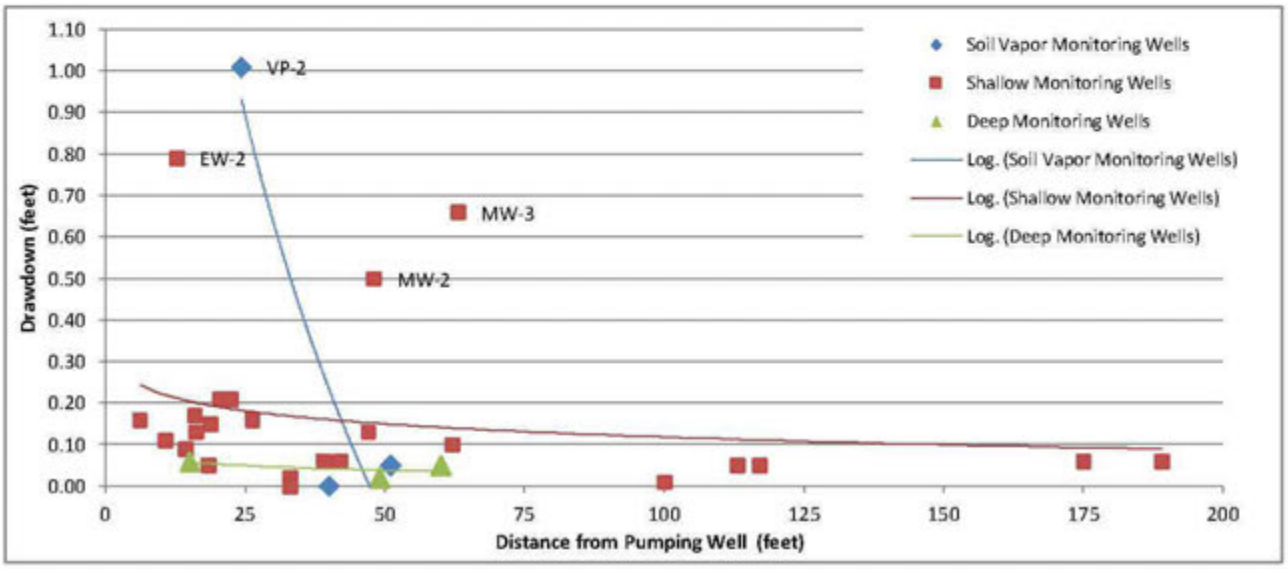


IW-1 Distance Drawdown

DPVE Duration: 7 hours 24 minutes
Sustained Air Flow Rate: 4.4 scfm
Liquid Flow Rate: 2 to 0.5 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/18/2014

Well ID	Screen Interval	Distance from Test Well (feet)	Drawdown (feet)
Soil Vapor Monitoring Points			
VP-2	7-8'	24.3	1.01
VP-1	7-8'	40	DRY
VP-3	7-8'	51	0.05
Shallow Monitoring Wells			
IW-1	10-20'	TEST WELL	
MW-9	12-22'	6.1	0.16
PT-8S	10-20'	10.6	0.11
EW-2	11-26'	12.7	0.79
PT-4S	9.5-19.5'	14.3	0.09
EW-3	8-28'	15.9	0.17
PT-2S	9-19'	16.2	0.13
MW-8	12-22'	18.4	0.05
IP-1	10-18'	18.7	0.15
PT-2N	8-18'	20.5	0.21
PT-4N	9-19'	22.3	0.21
PT-8N	9-19'	26.2	0.16
CP-4	to 11'	33	0.02
IW-2	10-20'	33	(+0.12)
EW-1	9-29'	39	0.06
MW-1	7-22'	42	0.06
MW-10	7-22'	47	0.13
MW-2	9-24'	48	0.50
MW-12	7-22'	62	0.10
MW-3	12-22'	63	0.66
MW-4	10-22'	100	0.01
MW-11	7-22'	113	0.05
MW-5	11-26'	117	0.05
MW-6	10-20'	175	0.06
MW-7	14-24'	189	0.06
Deep Monitoring Wells			
MW-8D	25-35'	15	0.06
MW-10D	25-35'	49	0.02
MW-12D	25-35'	60	0.05

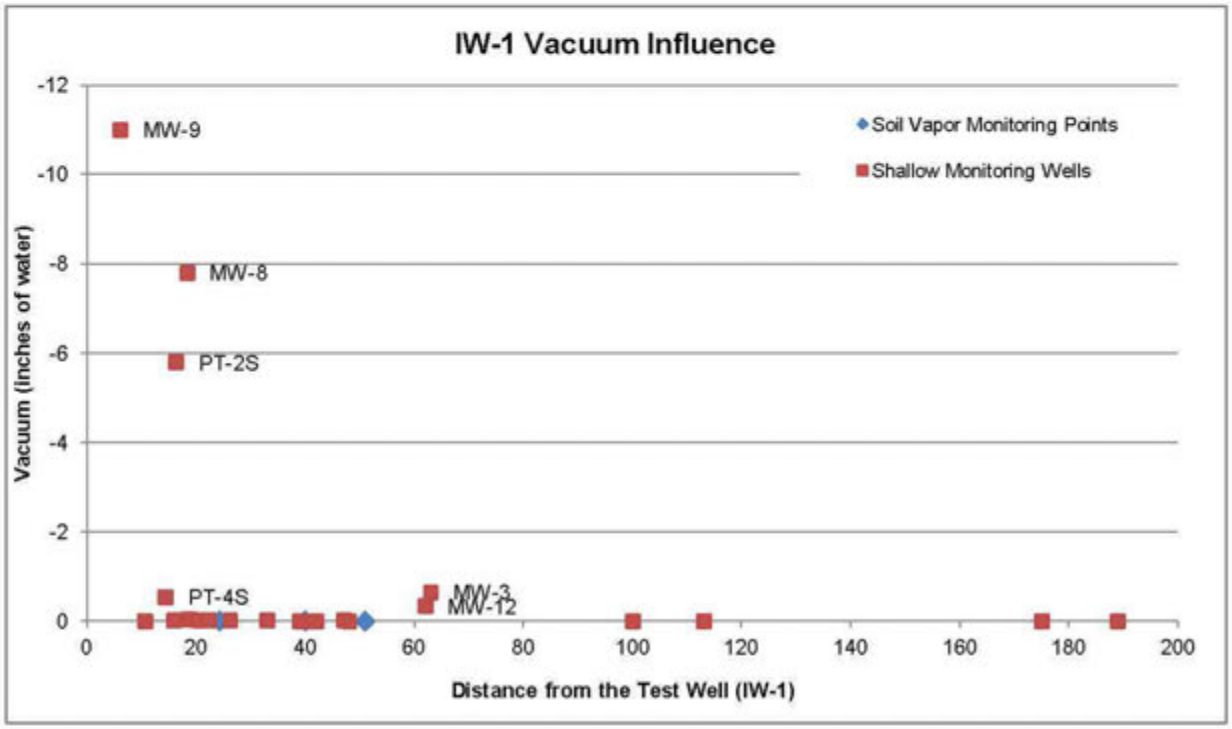


IW-1 Vacuum Influence

DPVE Duration: 7 hours 24 minutes
Sustained Air Flow Rate: 4.4 scfm
Liquid Flow Rate: 2 to 0.5 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/18/2014

Well ID	Screen Interval	Distance from Test Well (feet)	Vacuum/Pressure (inches of water)
Soil Vapor Monitoring Points			
VP-2	7-8'	24.3	-0.02
VP-1	7-8'	40	-0.01
VP-3	7-8'	51	-0.01
Shallow Monitoring Wells			
IW-1	10-20'	TEST WELL	
MW-9	12-22'	6.1	-11
PT-8S	10-20'	10.6	-0.01
PT-4S	9.5-19.5'	14.3	-0.55
EW-3	8-28'	15.9	-0.02
PT-2S	9-19'	16.2	-5.8
MW-8	12-22'	18.4	-7.8
IP-1	10-18'	18.7	-0.05
PT-2N	8-18'	20.5	-0.02
PT-4N	9-19'	22.3	-0.02
PT-8N	9-19'	26.2	-0.02
IW-2	10-20'	33	-0.02
EW-1	9-29'	39	-0.01
MW-1	7-22'	42	0
MW-10	7-22'	47	-0.02
MW-2	9-24'	48	0
MW-12	7-22'	62	-0.34
MW-3	12-22'	63	-0.65
MW-4	10-22'	100	0
MW-11	7-22'	113	0
MW-6	10-20'	175	0
MW-7	14-24'	189	0

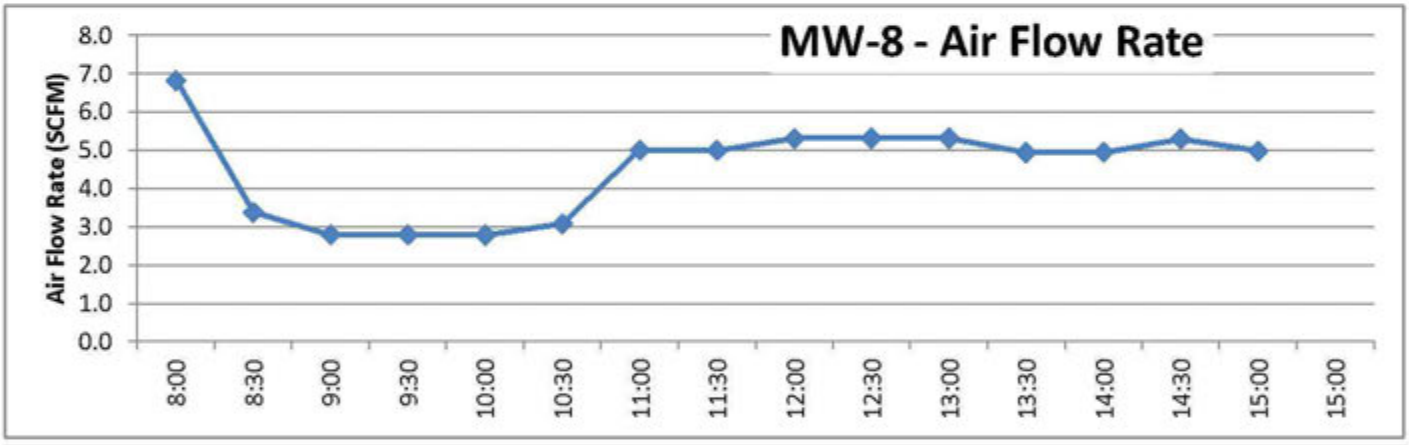


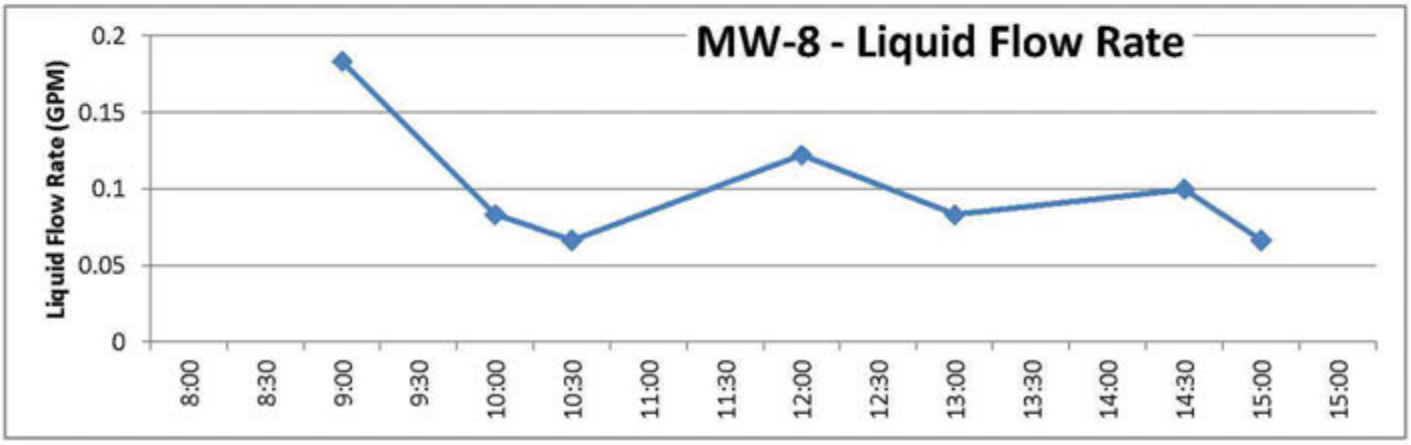
MW-8 Operational Data

DPVE Duration: 7 hours 10 minutes
Average Air Flow Rate: 4.5 scfm (average)
Liquid Flow Rate: 0.18 to 0.07 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/19/2014

Time	Vacuum (system)	Vacuum (drop pipe)	Vacuum (well head)	Air Flow	Temp	Air Flow	PID	Liquid flow	Total Liquid	GW Contam. Conc.	Air BTEX Conc.	Air TPH-GRO Conc.
	inches HG	inches HG	inches HG	CFM	deg F	SCFM	ppm	gpm	gallons	ug/L	mg/m3	mg/m3
8:00	START											
8:00	21	18	16	24	41	6.8	21					
8:30	21	18	16	12	45	3.4	485				1,409	91,000
9:00	21	18	16	10	49	2.8	531	0.18	11			
9:30	21	18	17	10	49	2.8	532					
10:00	21	18	17	10	51	2.8	484	0.08	16			
10:30	21	18	17	11	49	3.1	501	0.07	18	4,313	1,024	74,000
11:00	20	18	17	16	51	5.0	587					
11:30	20	18	17	16	52	5.0	487					
12:00	20	18	17	17	52	5.3	519	0.12	29			
12:30	20	18	18	17	51	5.3	520					
13:00	20	18	17	17	51	5.3	509	0.08	34	4,065	985	74,000
13:30	20	18	18	16	58	4.9	514					
14:00	20	18	18	16	57	5.0	535					
14:30	20	18	18	17	53	5.3	531	0.10	43			
15:00	20	18	18	16	54	5.0	581	0.07	45	4,069	585	87,000
15:00	END											
Averages:	**20.4**	**18.0**	**17.1**			**4.5**	**489.1**					

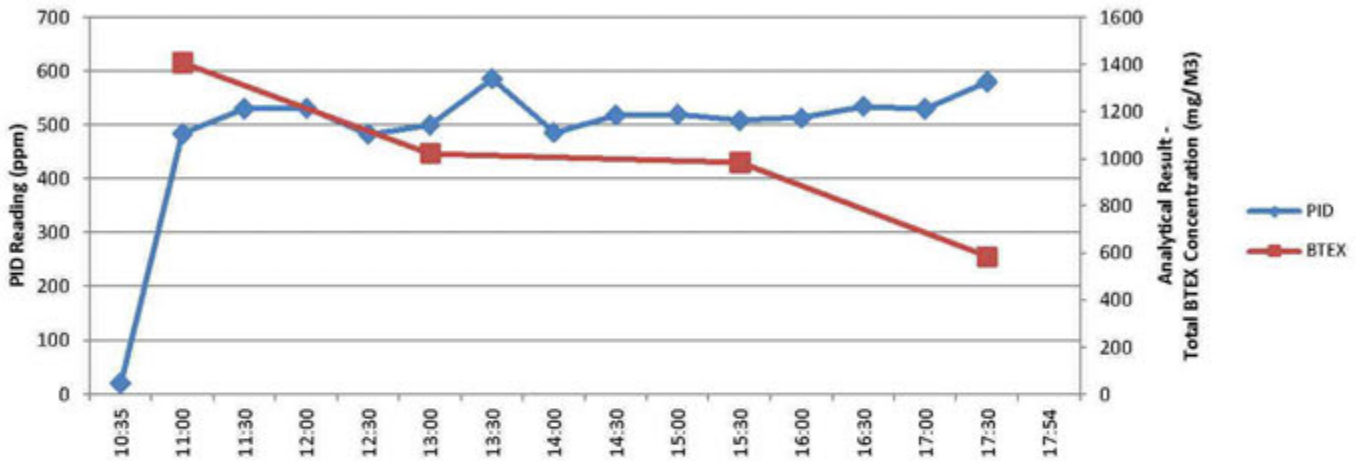




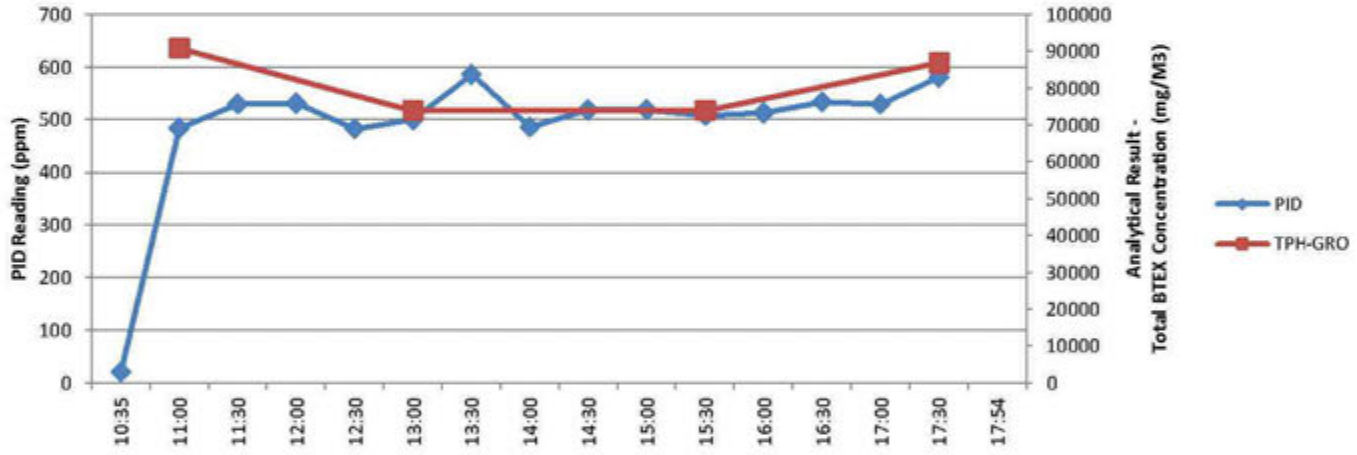
MW-8 Operational Data
DPVE Duration: 7 hours 10 minutes
Average Air Flow Rate: 4.5 scfm (average)
Liquid Flow Rate: 0.18 to 0.07 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/19/2014

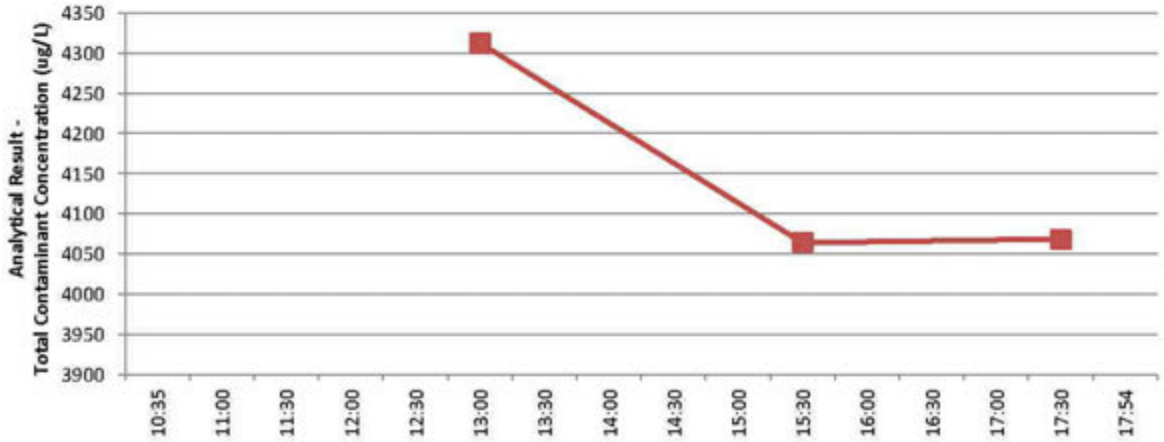
MW-8 - PID Readings & Air Analytical Results (BTEX)



MW-8 - PID Readings & Air Analytical Results (TPH-GRO)



MW-8 - Groundwater Analytical Results



MW-8 Operational Data

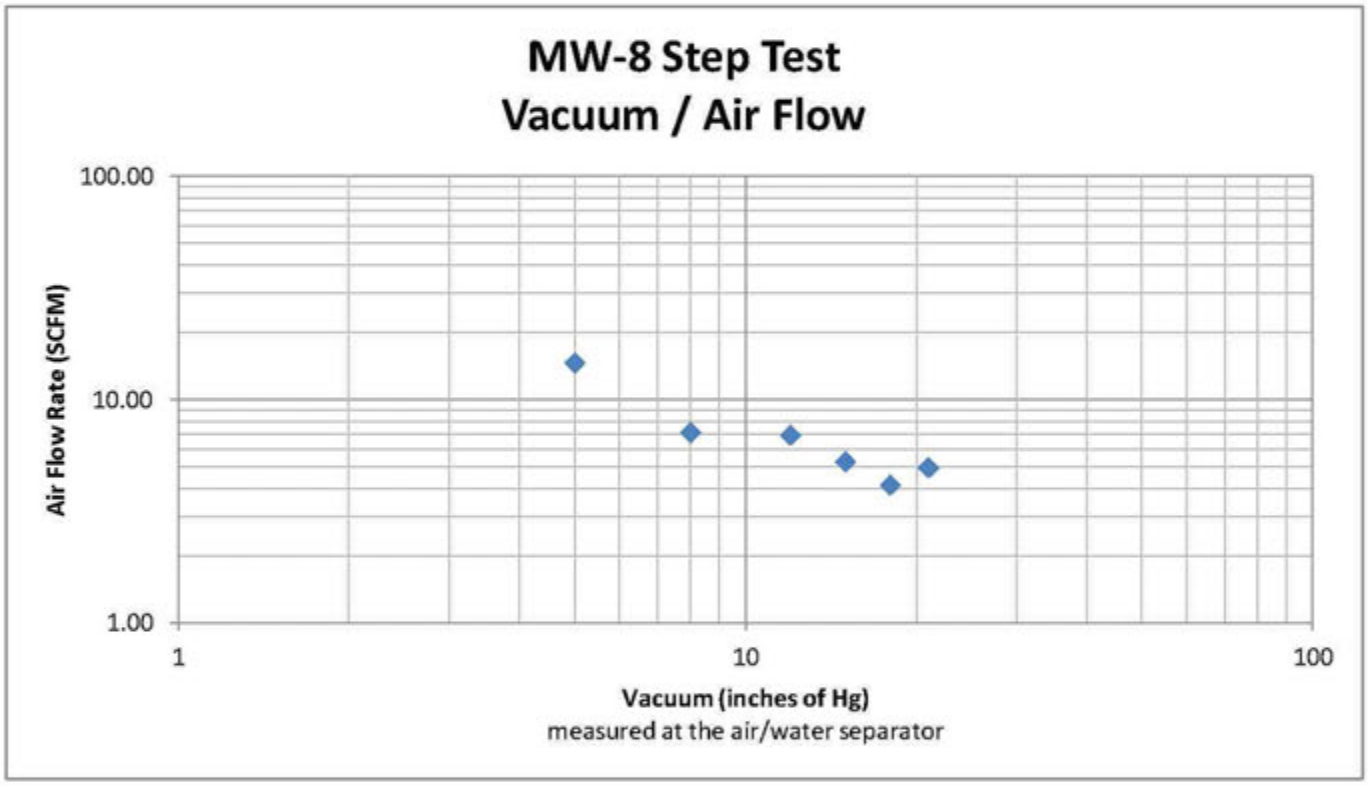
DPVE Duration: 7 hours 10 minutes
Average Air Flow Rate: 4.5 scfm (average)
Liquid Flow Rate: 0.18 to 0.07 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/19/2014

MW-8 Step Test

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/19/2014

Time	Vacuum (system) inches HG	Air Flow CFM	Temp deg F	Air Flow SCFM
13:10	START			
13:15	5	18	61	14.68
13:20	8	10	61	7.14
13:25	12	12	59	6.97
13:30	15	11	58	5.27
13:35	18	11	56	4.17
13:40	21	18	56	4.97

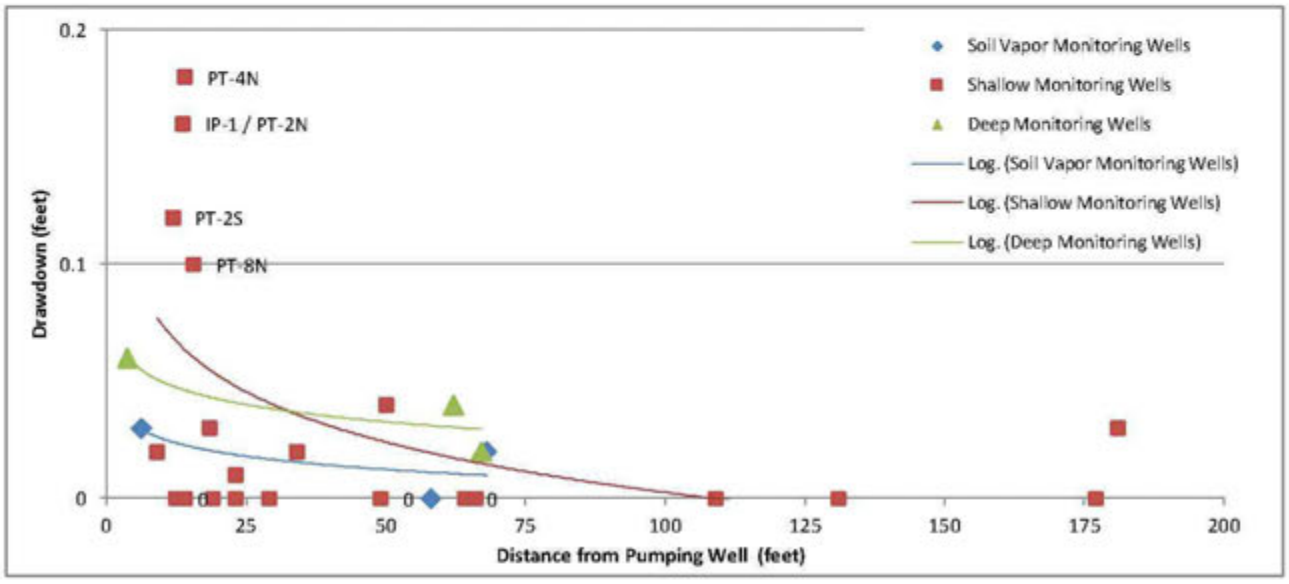


MW-8 Distance Drawdown

DPVE Duration: 7 hours 10 minutes
Average Air Flow Rate: 4.5 scfm (average)
Liquid Flow Rate: 0.18 to 0.07 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/19/2014

Well ID	Screen Interval	Distance from Test Well (feet)	Drawdown (feet)
Soil Vapor Monitoring Points			
VP-2	7-8'	6.2	0.03
VP-1	7-8'	58	DRY
VP-3	7-8'	68	0.02
Shallow Monitoring Wells			
MW-8	12-22'	TEST WELL	
EW-2	11-26'	9	0.02
PT-2S	9-19'	11.8	0.12
PT-4S	9.5-19.5'	12.3	(+0.05)
IP-1	10-18'	13.6	0.16
PT-2N	8-18'	13.6	0.16
PT-4N	9-19'	14	0.18
PT-8S	10-20'	14	0
PT-8N	9-19'	15.5	0.10
IW-1	10-20'	18.4	0.03
MW-9	12-22'	19	0
CP-4	to 11'	23	0
EW-1	9-29'	23	0.01
MW-1	7-22'	29	0
EW-3	8-28'	34	0.02
MW-3	12-22'	49	(+0.01)
IW-2	10-20'	50	0.04
MW-10	7-22'	64	(+0.01)
MW-12	7-22'	64	0
MW-2	9-24'	66	0
MW-4	10-22'	109	0
MW-11	7-22'	131	0
MW-5	11-26'	132	
MW-6	10-20'	177	0
MW-7	14-24'	181	0.03
Deep Monitoring Wells			
MW-8D	25-35'	3.7	0.06
MW-12D	25-35'	62	0.04
MW-10D	25-35'	67	0.02

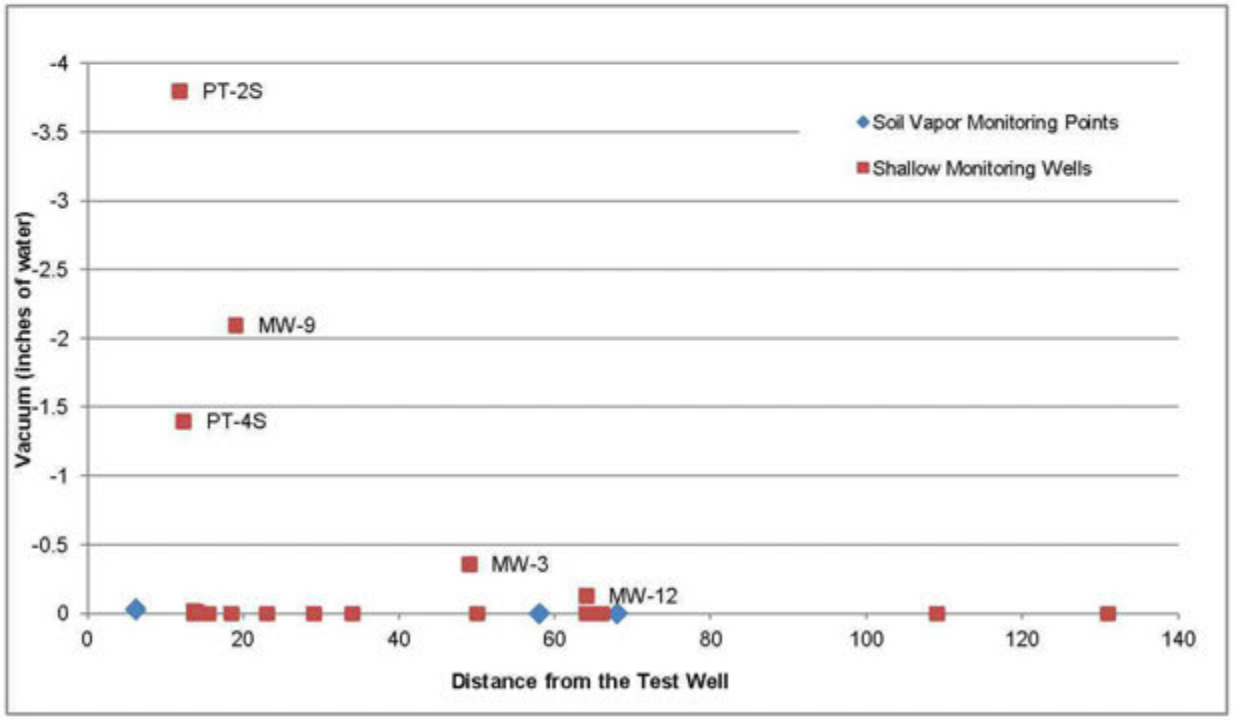


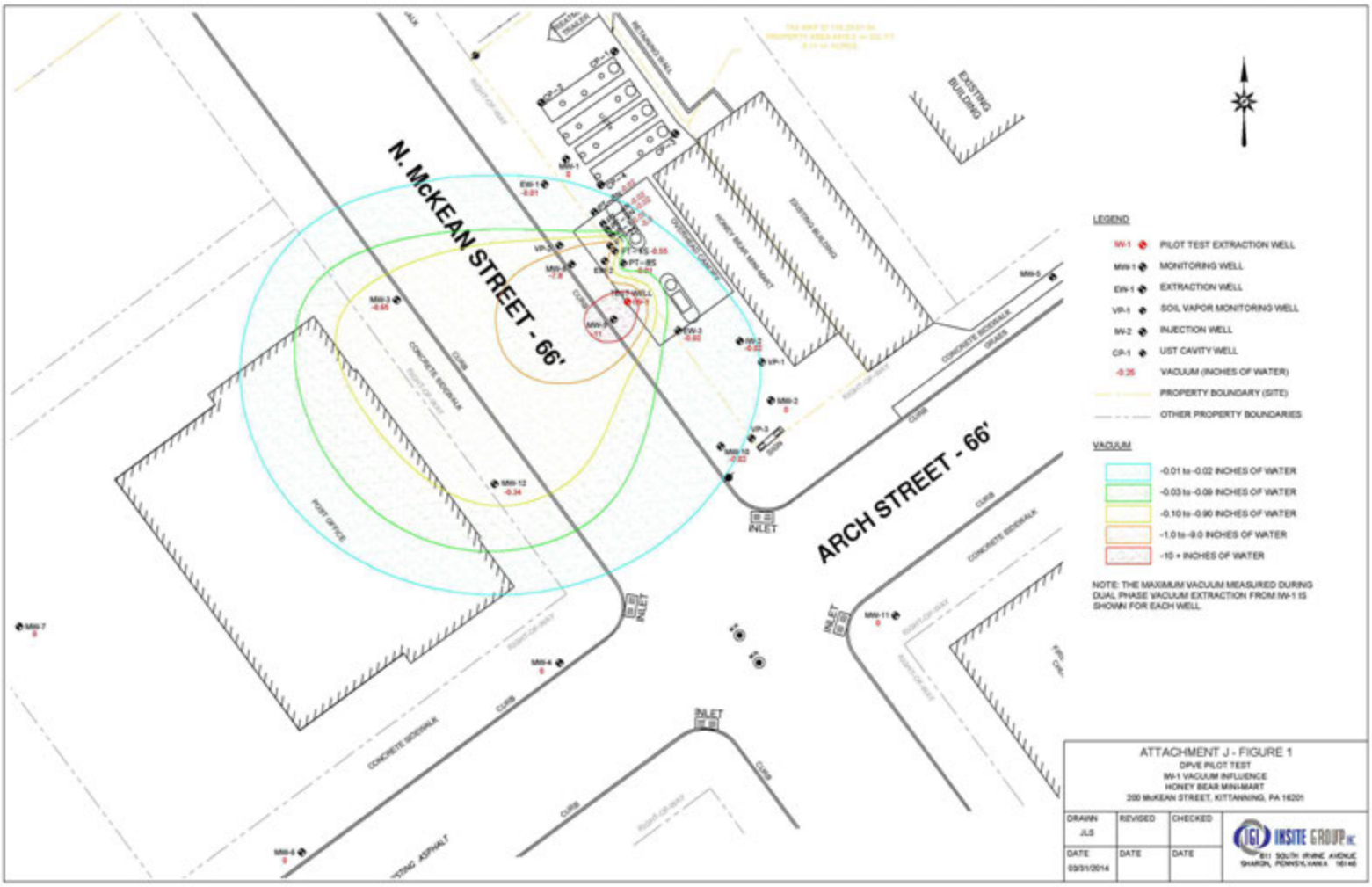
MW-8 Vacuum Influence

DPVE Duration: 7 hours 10 minutes
Average Air Flow Rate: 4.5 scfm (average)
Liquid Flow Rate: 0.18 to 0.07 gpm

Honey Bear Mini-Mart
200 McKean Street, Kittanning, PA 16201
DPVE Pilot Testing
3/19/2014

Well ID	Screen Interval	Distance from Test Well (feet)	Vacuum/Pressure (inches of water)
Soil Vapor Monitoring Points			
VP-2	7-8'	6.2	-0.03
VP-1	7-8'	58	0
VP-3	7-8'	68	0
Shallow Monitoring Wells			
MW-8	12-22'	TEST WELL	
PT-2S	9-19'	11.8	-3.8
PT-4S	9.5-19.5'	12.3	-1.4
IP-1	10-18'	13.6	-0.02
PT-2N	8-18'	13.6	0
PT-4N	9-19'	14	0
PT-8S	10-20'	14	-0.01
PT-8N	9-19'	15.5	0
IW-1	10-20'	18.4	0
MW-9	12-22'	19	-2.1
EW-1	9-29'	23	0
MW-1	7-22'	29	0
EW-3	8-28'	34	0
MW-3	12-22'	49	-0.36
IW-2	10-20'	50	0
MW-10	7-22'	64	0
MW-12	7-22'	64	-0.13
MW-2	9-24'	66	0
MW-4	10-22'	109	0
MW-11	7-22'	131	0
MW-6	10-20'	177	-0.01
MW-7	14-24'	181	-0.01

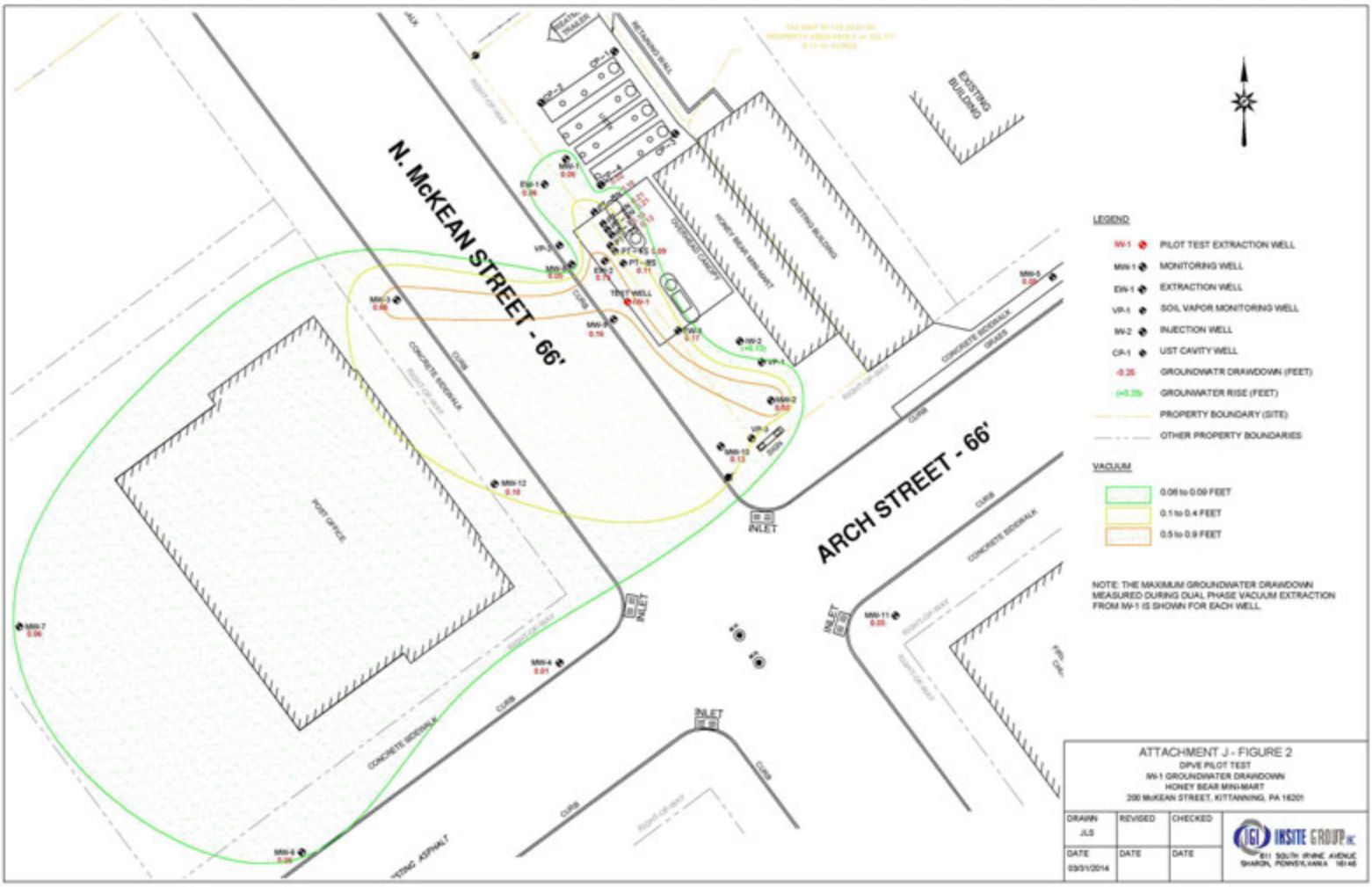




ATTACHMENT J - FIGURE 1
DPVE PILOT TEST
IW-1 VACUUM INFLUENCE
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201

DRAWN	REVISED	CHECKED
JLS		
DATE	DATE	DATE
03/31/2014		

INSITE GROUP INC
811 SOUTH IRWIN AVENUE
SHARON, PENNSYLVANIA 16146


N. McKEAN STREET - 66'
ARCH STREET - 66'
EXISTING BUILDING
HONEY BEAR MINI-MART
OVERHEAD CANOPY
POST OFFICE
RETAINING WALL
CONCRETE SIDEWALK
CURB
INLET
LEGEND
IW-1 PILOT TEST EXTRACTION WELL
MW-1 MONITORING WELL
EW-1 EXTRACTION WELL
VP-1 SOIL VAPOR MONITORING WELL
IW-2 INJECTION WELL
CP-1 UST CAVITY WELL
-0.25 GROUNDWATR DRAWDOWN (FEET)
(+0.39) GROUNWATER RISE (FEET)
PROPERTY BOUNDARY (SITE)
OTHER PROPERTY BOUNDARIES
VACUUM
0.06 to 0.09 FEET
0.1 to 0.4 FEET
0.5 to 0.9 FEET
NOTE: THE MAXIMUM GROUNDWATER DRAWDOWN MEASURED DURING DUAL PHASE VACUUM EXTRACTION FROM IW-1 IS SHOWN FOR EACH WELL.
ATTACHMENT J - FIGURE 2
DPVE PILOT TEST
IW-1 GROUNDWATER DRAWDOWN
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
DRAWN JLS
REVISED
CHECKED
DATE 03/31/2014
DATE
DATE
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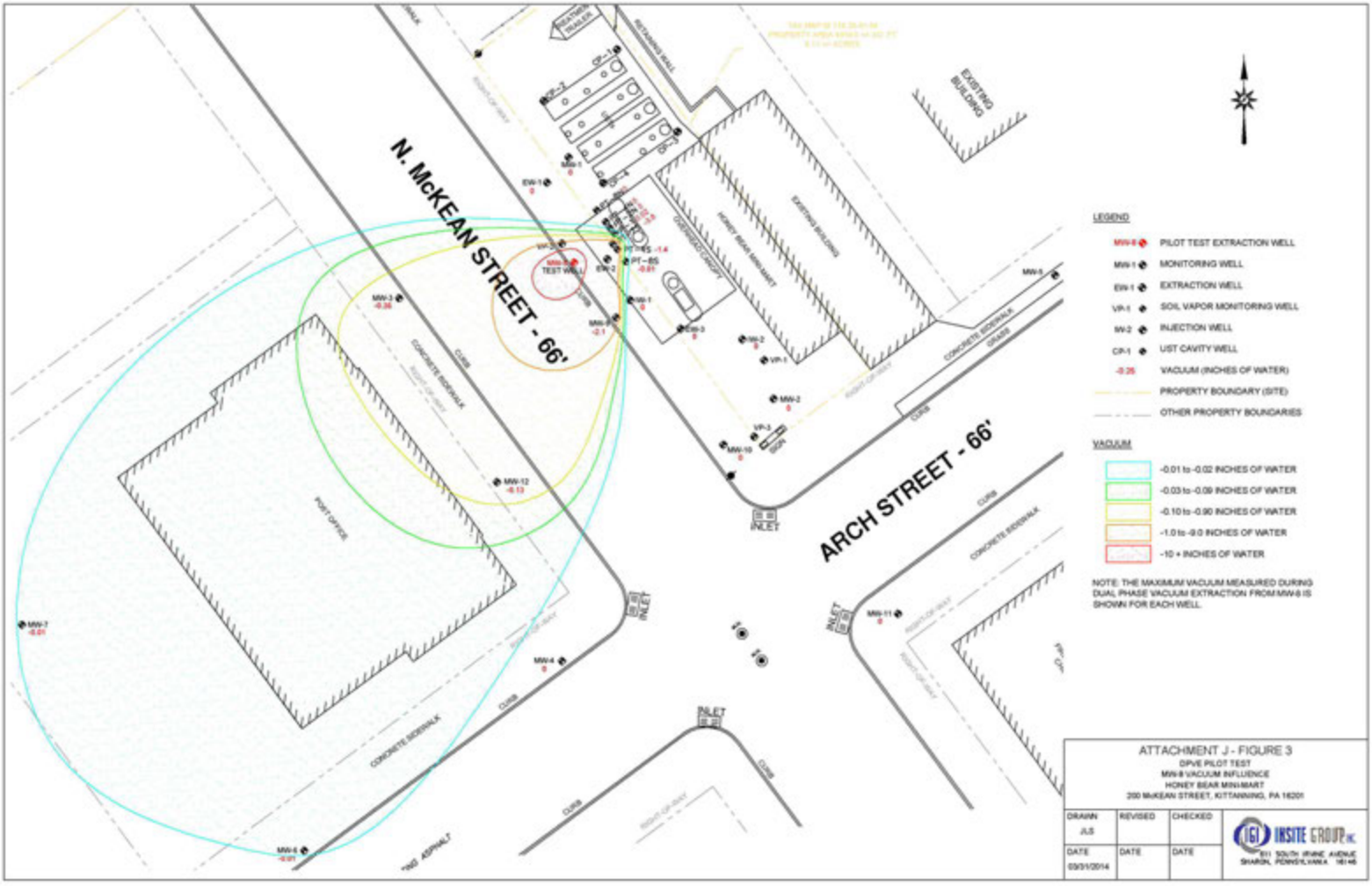
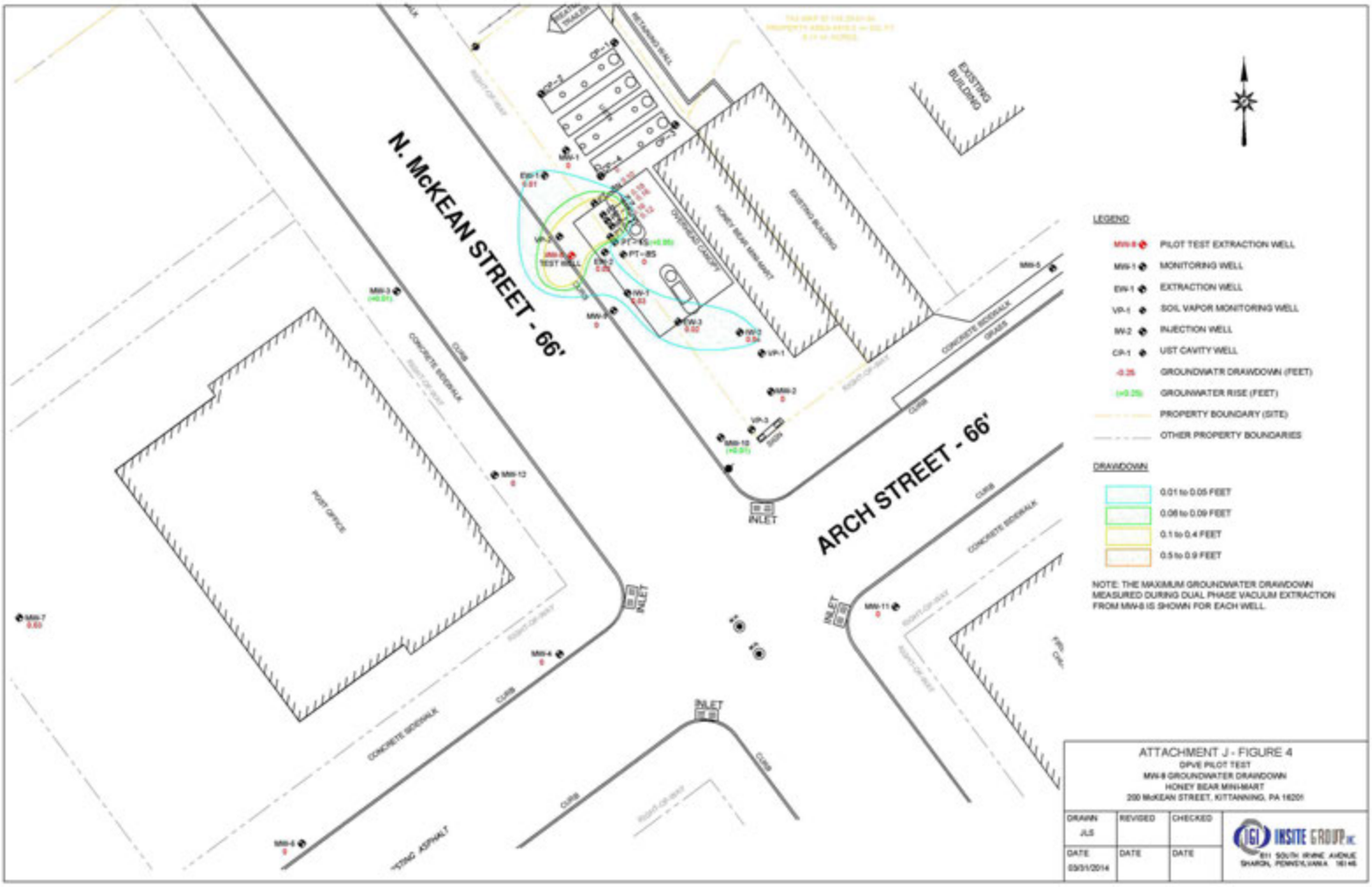
SHARON, PENNSYLVANIA 16146



ATTACHMENT J - FIGURE 3
DPVE PILOT TEST
MW-8 VACUUM INFLUENCE
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201

DRAWN	REVISED	CHECKED
JLS		
DATE	DATE	DATE
03/31/2014		

INSITE GROUP INC.
311 SOUTH IRWIN AVENUE
SHARON, PENNSYLVANIA 16146


N. McKEAN STREET - 66'
ARCH STREET - 66'
EXISTING BUILDING
HONEY BEAR MINI-MART
OVERHEAD CANOPY
RETAINING WALL
POST OFFICE
CONCRETE SIDEWALK
CURB
INLET
RIGHT-OF-WAY
TEST WELL
LEGEND
MW-8 PILOT TEST EXTRACTION WELL
MW-1 MONITORING WELL
EW-1 EXTRACTION WELL
VP-1 SOIL VAPOR MONITORING WELL
IW-2 INJECTION WELL
CP-1 UST CAVITY WELL
-0.25 GROUNDWATR DRAWDOWN (FEET)
(+0.25) GROUNWATER RISE (FEET)
PROPERTY BOUNDARY (SITE)
OTHER PROPERTY BOUNDARIES
DRAWDOWN
0.01 to 0.05 FEET
0.06 to 0.09 FEET
0.1 to 0.4 FEET
0.5 to 0.9 FEET
NOTE: THE MAXIMUM GROUNDWATER DRAWDOWN MEASURED DURING DUAL PHASE VACUUM EXTRACTION FROM MW-8 IS SHOWN FOR EACH WELL.
ATTACHMENT J - FIGURE 4
DPVE PILOT TEST
MW-8 GROUNDWATER DRAWDOWN
HONEY BEAR MINI-MART
200 McKEAN STREET, KITTANNING, PA 16201
DRAWN JLS
REVISED
CHECKED
DATE 03/31/2014
DATE
DATE
INSITE GROUP INC.
811 SOUTH IRVINE AVENUE
SHARON, PENNSYLVANIA 16146

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Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Monday March 31, 2014

Report Number: L689351
Samples Received: 03/21/14
Client Project: ARCH STREET

Description: Pilot Testing-GW

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-01

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : IW-1A

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/18/14 11:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	640	3.3	10.	ug/l		8260B	03/25/14	10
Ethylbenzene	840	3.8	10.	ug/l		8260B	03/25/14	10
Isopropylbenzene	83.	3.3	10.	ug/l		8260B	03/25/14	10
Methyl tert-butyl ether	U	3.7	10.	ug/l	J3	8260B	03/25/14	10
Naphthalene	820	10.	50.	ug/l	J3	8260B	03/25/14	10
Toluene	54.	7.8	50.	ug/l		8260B	03/25/14	10
Total Xylenes	4000	11.	30.	ug/l		8260B	03/25/14	10
Surrogate Recovery								
Toluene-d8	98.8			% Rec.		8260B	03/25/14	10
Dibromofluoromethane	96.6			% Rec.		8260B	03/25/14	10
4-Bromofluorobenzene	105.			% Rec.		8260B	03/25/14	10

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-02

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : IW-1B

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/18/14 12:39

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	620	6.6	20.	ug/l		8260B	03/27/14	20
Ethylbenzene	620	7.7	20.	ug/l		8260B	03/27/14	20
Isopropylbenzene	32.	0.33	1.0	ug/l		8260B	03/25/14	1
Methyl tert-butyl ether	15.	0.37	1.0	ug/l	J3	8260B	03/25/14	1
Naphthalene	250	20.	100	ug/l		8260B	03/27/14	20
Toluene	42.	0.78	5.0	ug/l		8260B	03/25/14	1
Total Xylenes	1900	21.	60.	ug/l		8260B	03/27/14	20
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	03/25/14	1
Dibromofluoromethane	95.6			% Rec.		8260B	03/25/14	1
4-Bromofluorobenzene	97.3			% Rec.		8260B	03/25/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-03

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : IW-1C

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/18/14 14:34

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	590	6.6	20.	ug/l		8260B	03/27/14	20
Ethylbenzene	610	7.7	20.	ug/l		8260B	03/27/14	20
Isopropylbenzene	30.	0.33	1.0	ug/l		8260B	03/25/14	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l	J3	8260B	03/25/14	1
Naphthalene	250	20.	100	ug/l		8260B	03/27/14	20
Toluene	39.	0.78	5.0	ug/l		8260B	03/25/14	1
Total Xylenes	1700	21.	60.	ug/l		8260B	03/27/14	20
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	03/25/14	1
Dibromofluoromethane	95.6			% Rec.		8260B	03/25/14	1
4-Bromofluorobenzene	96.6			% Rec.		8260B	03/25/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-04

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : IW-1D

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/18/14 17:43

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	620	6.6	20.	ug/l		8260B	03/27/14	20
Ethylbenzene	680	7.7	20.	ug/l		8260B	03/27/14	20
Isopropylbenzene	35.	0.33	1.0	ug/l		8260B	03/25/14	1
Methyl tert-butyl ether	10.	0.37	1.0	ug/l	J3	8260B	03/25/14	1
Naphthalene	230	20.	100	ug/l		8260B	03/27/14	20
Toluene	43.	0.78	5.0	ug/l		8260B	03/25/14	1
Total Xylenes	1800	21.	60.	ug/l		8260B	03/27/14	20
Surrogate Recovery								
Toluene-d8	99.3			% Rec.		8260B	03/25/14	1
Dibromofluoromethane	98.9			% Rec.		8260B	03/25/14	1
4-Bromofluorobenzene	98.7			% Rec.		8260B	03/25/14	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-05

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : MW-8A

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/19/14 10:23

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	860	1.6	5.0	ug/l		8260B	03/25/14	5
Ethylbenzene	630	1.9	5.0	ug/l		8260B	03/25/14	5
Isopropylbenzene	29.	1.6	5.0	ug/l		8260B	03/25/14	5
Methyl tert-butyl ether	24.	1.8	5.0	ug/l	J3	8260B	03/25/14	5
Naphthalene	270	5.0	25.	ug/l	J3	8260B	03/25/14	5
Toluene	100	3.9	25.	ug/l		8260B	03/25/14	5
Total Xylenes	2400	5.3	15.	ug/l		8260B	03/25/14	5
Surrogate Recovery								
Toluene-d8	98.5			% Rec.		8260B	03/25/14	5
Dibromofluoromethane	96.0			% Rec.		8260B	03/25/14	5
4-Bromofluorobenzene	109.			% Rec.		8260B	03/25/14	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-06

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : MW-8B

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/19/14 13:15

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	1000	16.	50.	ug/l		8260B	03/30/14	50
Ethylbenzene	600	9.5	25.	ug/l		8260B	03/27/14	5
Isopropylbenzene	28.	8.0	25.	ug/l		8260B	03/27/14	5
Methyl tert-butyl ether	17.	9.0	25.	ug/l	J	8260B	03/27/14	5
Naphthalene	210	25.	130	ug/l		8260B	03/27/14	5
Toluene	110	20.	130	ug/l	J	8260B	03/27/14	5
Total Xylenes	2100	26.	75.	ug/l		8260B	03/27/14	5
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	03/27/14	5
Dibromofluoromethane	94.2			% Rec.		8260B	03/27/14	5
4-Bromofluorobenzene	104.			% Rec.		8260B	03/27/14	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 31, 2014

ESC Sample # : L689351-07

Date Received : March 21, 2014
Description : Pilot Testing-GW

Site ID : 03-07315

Sample ID : MW-8C

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/19/14 14:58

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Benzene	960	1.6	5.0	ug/l		8260B	03/27/14	5
Ethylbenzene	590	1.9	5.0	ug/l		8260B	03/27/14	5
Isopropylbenzene	26.	1.6	5.0	ug/l		8260B	03/27/14	5
Methyl tert-butyl ether	13.	1.8	5.0	ug/l		8260B	03/27/14	5
Naphthalene	180	5.0	25.	ug/l		8260B	03/27/14	5
Toluene	100	3.9	25.	ug/l		8260B	03/27/14	5
Total Xylenes	2200	5.3	15.	ug/l		8260B	03/27/14	5
Surrogate Recovery								
Toluene-d8	99.0			% Rec.		8260B	03/27/14	5
Dibromofluoromethane	96.1			% Rec.		8260B	03/27/14	5
4-Bromofluorobenzene	107.			% Rec.		8260B	03/27/14	5

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L689351-01	WG712358	SAMP	Methyl tert-butyl ether	R2897460	J3
	WG712358	SAMP	Naphthalene	R2897460	J3
L689351-02	WG712358	SAMP	Methyl tert-butyl ether	R2897460	J3
L689351-03	WG712358	SAMP	Methyl tert-butyl ether	R2897460	J3
L689351-04	WG712358	SAMP	Methyl tert-butyl ether	R2897460	J3
L689351-05	WG712358	SAMP	Methyl tert-butyl ether	R2897460	J3
	WG712358	SAMP	Naphthalene	R2897460	J3
L689351-06	WG712918	SAMP	Methyl tert-butyl ether	R2898075	J
	WG712918	SAMP	Toluene	R2898075	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Chain of Custody
Page 1 of 1

Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Report to: Sara Giordano

Email to: lab@insitegroup.org

Project Description: Pilot testing - GW

Site Collected: Kittanning, PA

Phone: 724 347 2101
FAX: 724 347 2139

Client Project #: Arch Street

ESC Key: INSITE-GW

Collected by: Adam Gaines

Site/Facility ID#: 03-07315

P.O.#:

Collected by (signature):

Packed on Ice: N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%

Date Results Needed:
Email? ___No ✓Yes
FAX? ✓No ___Yes

Analysis/Container/Preservative

v8260 BTEXMNI - 40 mL Amb - HCl

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

E213

CnCode (lab use only)

Template/Prelogin

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Ctrs	v8260 BTEXMNI - 40 mL Amb - HCl	Remarks/Contaminant	Sample # (lab only)
IW-1A	Grab	GW		03/18/14	1115	2	X		1681351
IW-1B	Grab	GW		03/18/14	1239	2	X		02
IW-1C	Grab	GW		03/18/14	1434	2	X		03
IW-1D	Grab	GW		03/18/14	1743	2	X		04
MW-8A	Grab	GW		03/19/14	1023	2	X		05
MW-8B	Grab	GW		03/19/14	1315	2	X		06
MW-8C	Grab	GW		03/19/14	1458	2	X		07

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Flow _____ Other _____

Remarks: Pl Priority

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	3/20/14	10:30		Temp:	Bottles Received:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	pH Checked:	NCF:

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Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Friday March 28, 2014

Report Number: L689429
Samples Received: 03/21/14
Client Project: ARCH STREET

Description: Pilot Testing - Vapor

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689429-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Sample ID : MW-8A

Collected By : Adam Gaines
Collection Date : 03/19/14 08:36

Parameter	Mol Wght	RDL(ppmv)	Result(ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	8.00	150.	480	M18-Mod	03/25/14	40000
Toluene	92.1	0.80	13.	49.	M18-Mod	03/25/14	4000
Ethylbenzene	106	0.800	59.0	260	M18-Mod	03/25/14	4000
m&p-Xylene	106	1.60	120.	520	M18-Mod	03/25/14	4000
o-Xylene	106	0.800	23.0	100	M18-Mod	03/25/14	4000
Methyl tert-butyl ether	88.1	0.800	< 0.80	< 2.9	M18-Mod	03/25/14	4000
TPH (GC/MS) Low Fraction	101	2000	22000	91000	M18-Mod	03/25/14	40000
1,4-Bromofluorobenzene			97.9	% Rec.	M18-Mod	03/25/14	4000

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689429-02

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Sample ID : MW-8B

Collected By : Adam Gaines
Collection Date : 03/19/14 10:18

Parameter	Mol Wght	RDL (ppmv)	Result (ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	1.60	110.	350	M18-Mod	03/25/14	8000
Toluene	92.1	1.6	12.	45.	M18-Mod	03/25/14	8000
Ethylbenzene	106	1.60	42.0	180	M18-Mod	03/25/14	8000
m&p-Xylene	106	3.20	87.0	380	M18-Mod	03/25/14	8000
o-Xylene	106	1.60	16.0	69.	M18-Mod	03/25/14	8000
Methyl tert-butyl ether	88.1	1.60	< 1.6	< 5.8	M18-Mod	03/25/14	8000
TPH (GC/MS) Low Fraction	101	2000	18000	74000	M18-Mod	03/25/14	40000
1,4-Bromofluorobenzene			97.8	% Rec.	M18-Mod	03/25/14	8000

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689429-03

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Site ID : 03-07315

Sample ID : MW-8C

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/19/14 13:08

Parameter	Mol Wght	RDL (ppmv)	Result (ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	4.00	110.	350	M18-Mod	03/26/14	20000
Toluene	92.1	0.80	9.5	36.	M18-Mod	03/25/14	4000
Ethylbenzene	106	0.800	40.0	170	M18-Mod	03/25/14	4000
m&p-Xylene	106	1.60	84.0	360	M18-Mod	03/25/14	4000
o-Xylene	106	0.800	16.0	69.	M18-Mod	03/25/14	4000
Methyl tert-butyl ether	88.1	0.800	< 0.80	< 2.9	M18-Mod	03/25/14	4000
TPH (GC/MS) Low Fraction	101	2000	18000	74000	M18-Mod	03/27/14	40000
1,4-Bromofluorobenzene			101.	% Rec.	M18-Mod	03/25/14	4000

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689429-04

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Sample ID : MW-8D

Collected By : Adam Gaines
Collection Date : 03/19/14 14:55

Parameter	Mol Wght	RDL (ppmv)	Result (ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	0.800	61.0	190	M18-Mod	03/25/14	4000
Toluene	92.1	0.80	5.9	22.	M18-Mod	03/25/14	4000
Ethylbenzene	106	0.800	24.0	100	M18-Mod	03/25/14	4000
m&p-Xylene	106	1.60	52.0	230	M18-Mod	03/25/14	4000
o-Xylene	106	0.800	10.0	43.	M18-Mod	03/25/14	4000
Methyl tert-butyl ether	88.1	0.800	< 0.80	< 2.9	M18-Mod	03/25/14	4000
TPH (GC/MS) Low Fraction	101	2000	21000	87000	M18-Mod	03/27/14	40000
1,4-Bromofluorobenzene			101.	% Rec.	M18-Mod	03/25/14	4000

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
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Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
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Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

Report to: Sara Giordano
Email to: lab@insitegroup.org
Project Description: Pilot testing - vapor
City Site Located: Kittanning, PA
Phone: 724 347 2101
FAX: 724 347 2139
Client Project #: Arch Street
LSC Key: INSITE-AIR
Collected by: Adam Gaines
Site/Facility ID#: 03-07315
P.O.#:
Collected by (signature):
Packed on Ice: N X Y
Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
Date Results Needed:
Email? __No ✓ Yes
FAX? ✓ No __Yes
No. of Cntrs
M-18 Mod - Summa Canister

CoCode (lab use only)
Template/Prelogin
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	M-18 Mod - Summa Canister	Remarks/Contaminant	Sample # (lab only)
MW-8A	Grab	Air		03/19/14	0836	1	X		-02
MW-8B	Grab	Air		03/19/14	1018	1	X		-03
MW-8C	Grab	Air		03/19/14	1308	1	X		-04
MW-8D	Grab	Air		03/19/14	1455	1	X		-05

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH _____ Temp _____

Remarks: DI Priority

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: (lab use only)
	3/20/14	16:30			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp:	Bottles Received: 4=Sample
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3-21-14	Time: 1000

pH Checked: NCF:

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

Report Summary

Friday March 28, 2014

Report Number: L689431
Samples Received: 03/21/14
Client Project: ARCH STREET

Description: Pilot Testing - Vapor

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Est. 1970

REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689431-01

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Sample ID : IW-1A

Collected By : Adam Gaines
Collection Date : 03/18/14 11:03

Parameter	Mol Wght	RDL(ppmv)	Result(ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	0.400	24.0	77.	M18-Mod	03/25/14	2000
Toluene	92.1	0.40	1.8	6.8	M18-Mod	03/25/14	2000
Ethylbenzene	106	0.400	15.0	65.	M18-Mod	03/25/14	2000
m&p-Xylene	106	0.800	42.0	180	M18-Mod	03/25/14	2000
o-Xylene	106	0.400	6.30	27.	M18-Mod	03/25/14	2000
Methyl tert-butyl ether	88.1	0.400	< 0.40	< 1.4	M18-Mod	03/25/14	2000
TPH (GC/MS) Low Fraction	101	2000	15000	62000	M18-Mod	03/27/14	40000
1,4-Bromofluorobenzene			104.	% Rec.	M18-Mod	03/25/14	2000

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689431-02

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Sample ID : IW-1B

Collected By : Adam Gaines
Collection Date : 03/18/14 12:35

Parameter	Mol Wght	RDL (ppmv)	Result (ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	0.400	33.0	110	M18-Mod	03/25/14	2000
Toluene	92.1	0.40	2.5	9.4	M18-Mod	03/25/14	2000
Ethylbenzene	106	0.400	26.0	110	M18-Mod	03/25/14	2000
m&p-Xylene	106	0.800	48.0	210	M18-Mod	03/25/14	2000
o-Xylene	106	0.400	6.40	28.	M18-Mod	03/25/14	2000
Methyl tert-butyl ether	88.1	0.400	< 0.40	< 1.4	M18-Mod	03/25/14	2000
TPH (GC/MS) Low Fraction	101	2000	17000	70000	M18-Mod	03/27/14	40000
1,4-Bromofluorobenzene			106.	% Rec.	M18-Mod	03/25/14	2000

RDL - Reported Detection Limit
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689431-03

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Site ID : 03-07315

Sample ID : IW-1C

Project # : ARCH STREET

Collected By : Adam Gaines
Collection Date : 03/18/14 14:32

Parameter	Mol Wght	RDL (ppmv)	Result (ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	0.800	37.0	120	M18-Mod	03/26/14	4000
Toluene	92.1	0.80	3.1	12.	M18-Mod	03/26/14	4000
Ethylbenzene	106	0.800	26.0	110	M18-Mod	03/26/14	4000
m&p-Xylene	106	1.60	47.0	200	M18-Mod	03/26/14	4000
o-Xylene	106	0.800	5.90	26.	M18-Mod	03/26/14	4000
Methyl tert-butyl ether	88.1	0.800	< 0.80	< 2.9	M18-Mod	03/26/14	4000
TPH (GC/MS) Low Fraction	101	1000	12000	50000	M18-Mod	03/26/14	20000
1,4-Bromofluorobenzene			101.	% Rec.	M18-Mod	03/26/14	4000

RDL - Reported Detection Limit
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REPORT OF ANALYSIS

Ms. Sara Giordano
Insite Group
611 S. Irvine Avenue
Sharon, PA 16146-1165

March 28, 2014

ESC Sample # : L689431-04

Site ID : 03-07315

Project # : ARCH STREET

Date Received : March 21, 2014
Description : Pilot Testing - Vapor

Sample ID : IW-1D

Collected By : Adam Gaines
Collection Date : 03/18/14 17:39

Parameter	Mol Wght	RDL(ppmv)	Result(ppmv)	mg/m3	Method	Date	Dil.
Benzene	78.1	0.800	25.0	80.	M18-Mod	03/26/14	4000
Toluene	92.1	0.80	2.2	8.3	M18-Mod	03/26/14	4000
Ethylbenzene	106	0.800	19.0	82.	M18-Mod	03/26/14	4000
m&p-Xylene	106	1.60	30.0	130	M18-Mod	03/26/14	4000
o-Xylene	106	0.800	3.60	16.	M18-Mod	03/26/14	4000
Methyl tert-butyl ether	88.1	0.800	< 0.80	< 2.9	M18-Mod	03/26/14	4000
TPH (GC/MS) Low Fraction	101	2000	14000	58000	M18-Mod	03/27/14	40000
1,4-Bromofluorobenzene			101.	% Rec.	M18-Mod	03/26/14	4000

RDL - Reported Detection Limit
Note:
Units are based on (STP) - Standard Temperature and Pressure
The reported analytical results relate only to the sample submitted.
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L136

Chain of Custody
Page 1 of 1

Prepared by:

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Insite Group, Inc.
611 S. Irvine Ave.
Sharon, PA 16146

Alternate billing information:

Analysis/Container/Preservative: M-18 Mod - Summa Canister

Report to: Sara Giordano
Email to: lab@insitegroup.org
Project Description: Pilot testing - vapor
City Site Collected: Kittanning, PA
Phone: 724 347 2101
FAX: 724 347 2139
Client Project #: Arch Street
ESC Key: INSITE-AIR
Collected by: Adam Gaines
Site/Facility ID#: 03-07315
P.O.#:
Collected by (signature):
Packed on Ice: N Y
Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
Date Results Needed:
Email? ___ No ✓ Yes
FAX? ✓ No ___ Yes
No. of Cntrs

CoCode (lab use only)
Template/Prelogin
Shipped Via:
Remarks Contaminant
Sample # (lab only)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	M-18 Mod - Summa Canister	Sample # (lab only)
IW-1A	Grab	Air		03/18/14	1103	1	X	-01
IW-1B	Grab	Air		03/18/14	1235	1	X	-02
IW-1C	Grab	Air		03/18/14	1432	1	X	-03
IW-1D	Grab	Air		03/18/14	1739	1	X	-04

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: 24 Priority

pH ___ Temp ___
Flow ___ Other ___

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	3/20/14	10:30	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐
Condition: (lab use only)
Temp: Bottles Received: 4 = Summa
Date: 3-21-14 Time:
pH Checked: NCF:

ATTACHMENT K

SAMPLING AND QUALITY ASSURANCE PLAN

Insite Group, Inc.
611 South Irvine Avenue
Sharon, PA 16146

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1.0 FIELD LOG DOCUMENTATION

1.1 Field Notebook

Objective

- Establish a permanent record of activities occurring at the site in a bound field notebook.

Procedure

Record all field activities in ink in the dedicated field notebook for the site. The information to be recorded includes the following:

- Date
- Weather conditions and estimated air temperature
- Arrival and departure times
- Purpose of site visit
- Name of IGI personnel on site
- Name and purpose of others visiting the site
- Sampling/task information
- Descriptive information
- Instructions to visitors
- Incidents
- Results of field analytical testing

1.2 Equipment Log

Objective

- Document usage of equipment and supplies at the site on a daily equipment log sheet.

Procedure

It is the responsibility of the task supervisor to complete the form by providing the following information:

- Client name
- Site name
- Description of work performed and task code
- Date
- Quantities of equipment and supplies used
- Number of in-field tests performed
- Number of samples collected for laboratory analytical testing
- Mileage
- Printed name and signature of field supervisor

2.0 SOIL AND ROCK SAMPLING

2.1 Naming Soil Borings

Objective

- Name each soil boring with a unique and systematic identification code.

Procedure

- Chose a category designation for the series of soil borings to be drilled. Common designation are listed below:
  - B (boring)
  - SB (soil boring)
  - MW (monitoring well)
  - GP (GeoProbe location)
  - SS (soil sampling location)
  - CS (confirmatory soil sampling location)
- Assign each soil boring with a number, sequentially.
- Pair the designation and number to form the unique identification (i.e. B-1).
- For each category designation, numbering shall begin with 1 (i.e. Borings B-1, B-2, B-3, MW-1, MW-2, MW-3).
- If previous soil borings with the same category designation have been completed at the site, begin with the next sequential number. (i.e. If borings B-1, B-2, B-3 were completed previously, then the boring number starts with B-4)

2.2 Drilling and Logging

Objectives

- Obtain as much information as possible to generate accurate test boring logs, cross sections, and data for fate and transport models.
- Establish consistent practices through the use of ASTM (American Society for Testing Materials) methodologies and USCS (Unified Soil Classification System) descriptions.

2.2.1 Soil

Procedure

- Record the date of the drilling event in the field notebook and on the boring log. Also record the times at which individual samples are collected from the boring.
- The driller advances the hollow stem augers and center plug to the beginning of the sampling interval and removes the center plug. Hollow stem augers range from 3¼ to 6-inch inside diameter. A center plug is used to keep the hollow stem clear of soil while it is advanced to the next sampling interval.
- The driller drives a 24 inch long, 2 inch diameter split spoon to collect an undisturbed soil sample. Spoons are advanced using the standard 140 lb hammer falling 30 inches. Split spoon samples are collected in accordance with ASTM Standard 1587.
- Record blow counts for every six inches of advance of the split spoon. In soft material, the weight of the rods (WOR) or the weight of the hammer (WOH) may be sufficient to advance the split spoon (i.e., WOH/1.0'). Stop the drive if the blow count has reached 50 blows for 0.5 foot or less (i.e. 50/0.4').
- Record the sampling interval (i.e. 4 – 6 feet).
- Record soil recovery on the log to the nearest 0.1-foot. Make the distinction between cuttings that have fallen into the hole prior to collecting the sample and soil that was collected *in-situ*. Note on the log the cause of poor recovery, if known (i.e., very loose soil or rock stuck in drive shoe).
- Describe the soil sample on the boring log.
  - Use Unified Soil Classification System (USCS) terminology to describe the soil sample. Well graded means there is a range of particle sizes in the sample;

poorly graded means there is mostly one particle size in the sample. Fat clays are highly plastic, lean clays have low plasticity.

- Soil Type: clay, silt, sand, gravel.
- Color: gray, black, brown, and olive green as well as shades such as light, medium and dark. A green tint in soils may indicate that the soil has been affected by petroleum.
- Moisture: dry, damp, moist, wet.
- Consistency / Density: Use blow counts to determine the consistency in clays and silts or density in sands and gravels. The consistencies and densities indicated in the blow count for a given soil type are provided below. Note that the terminology is based on a blow/foot and the blows are written on the log every 6 inches. Add the middle two blow counts to calculate the blows/foot.

Silts and Clays	
Blows/ft	*Consistency*
< 2	Very Soft
2 to 4	Soft
4 to 8	Medium Stiff
8 to 15	Stiff
15 to 30	Very Stiff
> 30	Hard

Sands and Gravels	
Blows/ft	*Density*
0 to 4	Very Loose
5 to 10	Loose
11 to30	Medium dense
31 to 50	Dense
> 50	Very Dense

- Sand Size: fine, medium, coarse.
- Gravel Size: fine, medium, coarse.
- Gravel Angularity: well-rounded, sub-angular, angular.
- Origin: residual, alluvial, colluvial, fill.
- Odors: gasoline, diesel.
- Staining: petroleum staining, iron staining.
- Type of gravel or rock fragments: quartzite, sandstone, limestone
- Type of Contact: sharp or gradational.

- The driller advances the augers and center plug to the beginning of the next sampling interval, removes the center plug and then drives the split spoon, in accordance with ASTM standards.

2.2.2 Rock

Background

There are two basic types of rock coring, conventional and wire line. Both types use a double or triple–tube core barrel. The outside barrel is tipped with a diamond bit and is rotated by the drill bit. The inner barrel rotates independently of the outer barrel and accepts the core as it is drilled.

Conventional coring uses standard heavy-duty drilling rods to turn the core barrel. Each time the inner core barrel is filled, the rods and core barrel must be taken out of the hole. The core barrel is disassembled, the core is removed from the hole, the barrel is reassembled and the core barrel and drilling rods are placed back down the hole.

A wire line core assembly allows the inner barrel to be removed from the hole and emptied without retrieving the outer barrel or any of the drilling rods. This makes the coring operation advance at a faster pace and allows the hole to remain open in unstable rock.

Core barrel assemblies come in various lengths. Five or ten foot lengths are commonly used in the environmental and geotechnical industry. Core diameters range from 1 3/8" to 6 inches. NX core(1-3/8") is commonly used.

Water or air is circulated to lift the rock cuttings out of the hole and to cool the bit. Water is pumped through the inside of the drilling rods, inside the core barrel and out the tip of the bit. Water and cuttings are then pushed to the surface. The amount of water fed into the hole, the down pressure, and the rotation of the drill rods can be varied.

Procedure

- Watch for a constant and steady return of cuttings and water.
  - Note any water loss (indicative of large fractures, voids, mines, etc.)
  - Note change of color of the cuttings.
  - Note zones where the core barrel becomes plugged, (indicative of clay seams, highly fractured zones or zones of high-angle fractures)
- Place the rock core into a core box with partitions for the core. Place the top of the rock at the upper left hand corner of the box. The core from top to bottom will read like a book, from left to right and top to bottom. Mark on the box the top and bottom depth of the run.
- Measure and record the length of the core recovered. The recovery is the total length of core recovered for a single run and may be expressed as a percentage by dividing the length of core recovered by the length of the core run.
- Measure and record the Rock Quality Designation (RQD), which is defined as the total length of all rock in the core run with lengths of over 0.4 feet divided by the total length of the run. The breaks in the rock are "natural breaks" and not those caused by handling. A break caused by handling is fresh and unweathered. These types of breaks may often be along bedding planes. A natural break frequently has staining or some deposit on the joint surface. They frequently occur along bedding planes but may occur in any orientation.
- Describe the rock core.
  - Color: Describe the color of the core when it is dry.
  - Major Lithology: Sandstone, shale, limestone, coal, fireclay
  - Bedding: Bedding can be very thin to massive, flat, rippled, cross-bedded, or disrupted.
  - Fossils: These include plant and invertebrate marine fossils. Vertebrate fossils are extremely rare. Bioturbated zones may be common in some sandy shales.
  - Contacts: Contacts are either gradational or sharp. A sharp contact implies erosion prior to the deposition of the upper rock unit. A gradational contact is either coarsing upward or fining upward. A coarsing upward sequence implies an infilling of an embayment. A fining upward sequence may indicate a channel/floodplain deposit.
  - Nodules: Ironstone nodules are prevalent in some shales. Pyrite crystals may occur in limestones and shales.
  - Dip: Dip can be described in terms of the attitude of bedding planes relative to the horizontal. A flat-lying bed dips zero degrees; a vertical bed dips 90 degrees. Joints and fractures also exhibit dip. Some dip features are primary, such as cross bedding in sandstones and slump features in shale. A measured dip in core is a relative dip because the core loses its orientation when it enters the core barrel.
  - Joints and Fractures: A description of joints and fractures in a core log is important because they serve as pathways for fluids in competent rock and planes of

weakness. A joint is a planar parting in a rock. A fracture is also a planar parting in a rock that exhibits evidence of movement along the planar surface. Slickensides is a good example of a fracture. Unless there is evidence of movement, such as striations or offset bedding, consider it a joint. Heavy ironstaining or mineral deposition on joint surfaces is an indication of water movement through the joint. Joints that have been filled with calcite are quite old and now act as the rock unit. Clay seams in shales and limestones were probably once open joints.

- Voids: Voids are very important features in limestones and can vary in size from less than an inch to many tens of feet.

2.3 Soil Sampling

Objectives

- Qualitatively assess the vertical gradient of contamination in a soil boring.
- Quantitatively determine the contaminant concentration at one or more depth intervals.

Equipment

- Photoionization Detector (PID)
- Soil sampling containers, provided by the laboratory
- Soil sampling device (i.e. T bar, open ended syringe), provided by the laboratory
- Sample labels
- Latex gloves
- Plastic zipper bags (1-gallon size)
- Paper towels

Procedure

- After describing the soil sample, divide the sample (80%, 20%) and place each portion in a re-sealable container such as a plastic zipper bag or a jar.
- Label each container with the site name, boring name, date, time and sampling depth interval.
- Use the smaller portion for headspace PID readings.
- Use the larger portion for analytical testing.

Headspace readings

- Allow the sample container to sit in a warm location for 15 minutes to facilitate volatilization of organic compounds.
- Follow the procedure for using PID meter (see section 9.1.1).
- Dispose of the sample in the drill cuttings container.

Analytical Testing

- Don new pair of disposable latex gloves for each sample to prevent cross contamination of samples.
- Fill sample vials or bottles according to directions provided by the laboratory.
- Prepare sample labels including the project name, sample ID, analysis required, date and time of collection. Affix the sample labels to the containers.
- Place analytical samples containers in a plastic bag and store on ice.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

3.0 GROUNDWATER SAMPLING

Objectives

- Quantitatively assess the contamination in groundwater.

Equipment

- Field notebook
- Site map
- Pens
- Sample labels
- Calculator
- Detergent water
- Rinse water
- De-ionized water
- DO kit and ampoules
- Camera
- Latex gloves
- Paper towels
- Rope
- Plastic cups
- Plastic zipper bags
- pH meter
- ORP meter
- Conductivity meter
- Temperature meter
- Sample containers
- Bio-sample containers
- Cooler
- Ice packs
- Submersible well pumps
- Disposable tubing
- 12V deep cycle battery
- Battery cart
- Bailers (3'x1.5", 4'x1.5" or 3'x0.75")
- Water level indicator
- Interface probe
- Toolbox
- Cones
- 5 gallon buckets
- Broom
- Shovel
- Ice chipping tools
- Metal detector
- Drums (open top)
- 1 um particulate filters (bag style)
- Carbon unit

Procedure

- Determine which wells are to be sampled. Consult the equipment list for the site to determine the type and quantity of supplies and equipment needed. Load the vehicle accordingly.
- Upon arrival at the site, note the date, time, weather conditions and the day's goals in the field notebook. Notify the site owner/store manager upon arrival at the site.
- Set up the table in the field notebook. Table headings should be: total depth (TD), depth to water (DTW), water column height (HT), 3 volumes (3 vol), depth to water after purge (DTW AP), final depth to water (Final DTW), sample time (ST), dissolved oxygen (DO), ORP and pH (parameters to be checked are site specific, refer to the site equipment list).
- Open the flushmounts. There may be water and mud in the flushmounts that will need to be removed. Remove the well caps and allow the water to equilibrate. Do not allow any surface water to infiltrate the wells.
- Measure the initial depth to water in the wells to the nearest 0.01 feet. Depth to water is to be measured from a marked location (black marker) on the Top of Casing (TOC). If there is no mark on the TOC, measure DTW on the north side of the casing. The water level indicator should be cleaned and a new pair of latex gloves should be worn for each well to prevent cross contamination.
- Calculate the volume to purge from each well. HT = TD-DTW. The conversion factor for a one-inch well is 0.0408, for a two-inch well is 0.1632, and for a four inch-well is

0.6528 gallons per linear foot. One well volume for a well, in gallons, is HT x conversion factor. Three well volumes are typically purged for sampling purposes.
  - The complete formula is (3 vol = (TD – DTW) x conversion factor x 3). This is the volume to purge from the well in gallons.
  - If there is less than one foot of water in the well, it is not to be sampled.
  - For initial well development, a minimum of five well volumes are to be purged.
  - Following excavation, a minimum of 10 well volumes are to be purged.
- Purge the wells (Bailing).
  - Measure enough rope to reach the bottom of the well. Tie one end of the rope to the bailer (bowline) and on the other end tie a slipknot. Anchor the slipknot end of the rope to a cone or to your wrist. Gently lower the bailer into the top of the water column and remove one bailer of water.
  - Note the conditions of the water and if any product is present. Continue to purge the well, surging the screened interval with the bailer in the process. Place purge water in buckets.
  - Bail until three well volumes, as previously calculated, are purged or until the well goes dry.
    - For one-inch wells, us a three foot, 0.75" diameter bailer.
    - For two-inch wells, use a three foot, 1.5" diameter bailer.
    - If the volume to be purged is greater than 10 gallons, a four foot, 1.5" diameter bailer may be used.
- Purge the wells (Pumping).
  - For four-inch wells and deep two-inch wells, use battery powered submersible well pumps for purging.
  - Lower a clean pump with attached disposable tubing to the bottom of the well. Lift the pump off of the bottom of the well approximately one foot. Connect the pump to a 12 volt battery and begin pumping into buckets.
  - Note the conditions of the water and if any product is present.
  - As the well is being purged, surge the screened interval using the pump, being careful not to hit the bottom of the well with the pump.
  - Pump until three well volumes, as calculated earlier, are purged or until the well goes dry.
- Collect samples of the purge water to measure pH, ORP, conductivity and temperature (see Section 9.0). Record the values in the field notebook table. Purging is considered complete when these parameters agree within 10 percent in consecutive well volumes.
- Measure the depth to water after purging is complete to measure drawdown and note it in the field notebook table (DTW AP).
- In the field notebook, note the time purging was completed, personnel who purged the well, the purging method (bail or pump), the volume purged, water clarity and color, if there was any odor or sheen present in the water, and any other relevant information.
- Filter purge water through a particulate filter (1 um bag filters) into an open top drum. Hang the filter on the drum using a metal pipe or broom handle.
  - Once the purge water has been filtered for sediments, treat it by pumping it through a carbon unit. Discharge to the surface.
  - Collect a discharge sample for laboratory analysis.
- Allow enough time for the water columns to recover. Only sample a well after the water columns have recovered to at least 70% of their initial height.

- Using a bailer, collect a sample from each well from the top of the water column for laboratory analysis. Fill the VOA sample containers completely, from the top of the bailer, leaving no head space in the containers. Collect one duplicate sample for QA/QC purposes. Label the sample MW-51.
- Collect a sample for analysis of dissolved oxygen (see section 9.1.4)
- Measure the depth to water after the sample is collected and record it in the field notebook (Final DTW).
- Replace the well cap, and close and bolt the flushmount lid on each well.
- Record the sample time in the field notebook.
- Prepare a sample label including the project name, sample ID, analysis required, date and time of collection. Affix sample labels to the sample containers.
- Place samples in a plastic zipper bag in a cooler, on ice.
- Upon departure from the site, notify the owner/store manager.
- Upon return to the IGI office, place samples in the sample refrigerator, complete a time sheet and equipment log.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.
- Decontaminate all equipment used (pumps, water level indicators, buckets).
- Spent filters are to be dried and placed in client specific containers at the IGI Office.
- Fill out the Job order and equipment log. Enter field data in the electronic files.
- Upon receipt of the laboratory analytical report, enter analytical data in electronic files.

4.0 VAPOR INTRUSION TESTING

The purpose of this section is to summarize the process of assessing the potential for vapor intrusion into a building and to provide direction for collecting samples and analyzing data. Detailed information is available in the Pennsylvania Vapor Intrusion Technical Guidance Document No. 253-0300-100 and the Massachusetts Indoor Air Sampling and Evaluation Guide. Both documents are available in the Insite Group, Inc. (IGI) office.

4.1 Screening to Assess the Potential for Vapor Intrusion

Contamination in either soil or groundwater can result in the intrusion of vapor phase contamination into a building. Therefore, both soil and groundwater media must be evaluated to determine if they pose a risk to indoor air quality.

The Pennsylvania Guidance Document provides decision matrices for soil and groundwater that serve as flowcharts for the screening process. These are included as attachments to this plan. In order to use the decision matrices, review site data and gather the following information:

- Determine if inhabited buildings exist within 100 feet of contaminated groundwater or soil.
- Determine if preferential pathways exist. If preferential pathways exist, the decision matrices for soil and groundwater are not applicable, and direct analysis of soil vapors or indoor air or mitigation is required.
- Determine if inhabited buildings have basements.
- Determine if separate phase liquid is present.
- Calculate average depth to groundwater.

- Establish a vertical profile of soil contamination.

Use the above information to answer questions in the decision matrices for every inhabited building within 100 feet of contamination.

The result of the screening process will be one of the following:
- Negligible risk for vapor intrusion is established. No further action required.
- A risk for vapor intrusion is established. Further action required.
- Sample soil vapor or indoor air or mitigate vapors.

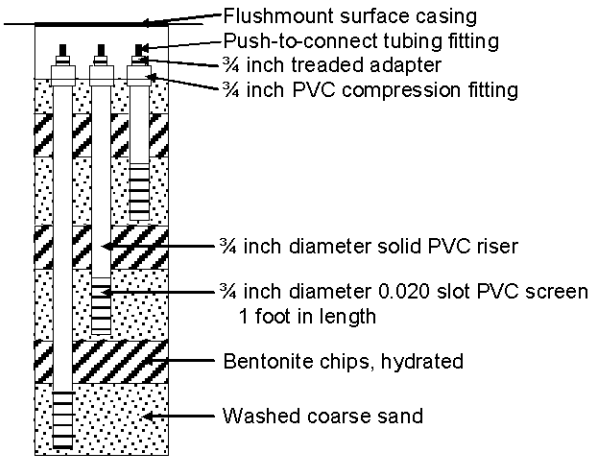
4.2 Soil Vapor Sampling

4.2.1 Soil Vapor Monitoring Well Installation

Objective
Install a soil vapor monitoring well that is representative of soil vapors that could potentially enter nearby buildings.

Equipment
- Drill rig
- Prefabricated ¾ inch diameter PVC soil vapor monitoring well with one foot of 0.020 slot PVC screen
- Washed, coarse sand
- Coarse powdered bentonite
- ¾ inch male treaded PVC cap
- Steel flushmount protective cover

Procedure
- Select the locations for installation of soil vapor monitoring wells. The wells shall be installed between the source area and nearby buildings or utility conduits.
- Determine the appropriate screen intervals. Soil vapor monitoring wells may be installed as nested sets or as single wells. Nested sets of wells provided additional data that may be used for risk assessment. If nested sets are installed, install the deepest screen interval approximately one to two feet above the water table.
- Drill a borehole using hollow stem augers or solid augers.
- Remove the augers and install the soil vapor monitoring wells.
- Pour washed, coarse sand into the borehole so that the entire well screen and several inches above and below the wells screen is in the sand.
- Pour bentonite chips into the borehole and hydrate to create a seal between well screen intervals and between the shallowest well screen and the surface.



- Install several inches of sand to grade.
- Install a flushmount protective surface casing using cement.
- Remove the ¾ inch threaded adapter and push-to-connect tube fitting and install a ¾ inch male threaded PVC cap.
- A diagram of a typical soil vapor monitoring well construction is shown at right.

4.2.2 Soil Vapor Sampling

Objective

- To collect a sample of soil vapor for the laboratory analysis of volatile organic compounds.

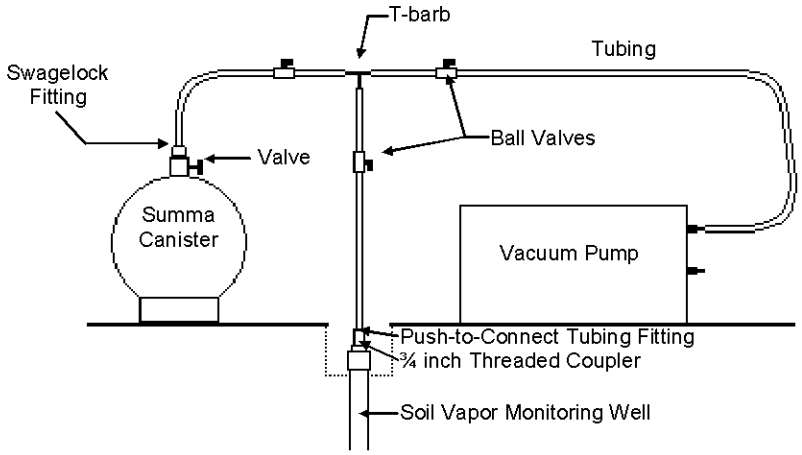
Equipment

- Passivated stainless steel vacuum sampling vessel (summa canister), provided by the laboratory
- Vacuum pump and associated tubing
- Teflon tubing with Swagelock fittings, provided by the laboratory
- One set of air sampling tubing and valves for each well. Each set contains:
  - 3/8 inch outside diameter, ¼ inch inside diameter tubing
  - ¼ inch outside diameter, 3/16 inch inside diameter tubing
  - 3 push-to-connect ball valves
  - ¼ inch "T" barb
  - ¾" male threaded coupler with push-to-connect tubing fitting
- Latex gloves
- Tools to access well
- Large crescent wrench or Channellock pliers
- Sample labels
- Cones
- Water level indicator
- Timer

Procedure:

- Calculate the total volume to be purged from each well.
  $V = h \pi r^2$, where V is the volume of the well, h is the total depth of the well (feet), r is the radius of the well (feet). Covert from cubic feet to liters (1 cubic foot = 28.32 liters)
- Determine the air flow rate of the vacuum pump to be used.
- Calculate the time required to purge the necessary volume.
  Volume (liters) / Air Flow Rate (liters per minute) = Purge Time (minutes)
- Place cones around the well to be sampled.
- Open the flushmount and remove the well cap (threaded plug) using the crescent wrench or Channellock pliers. Make sure that the PVC compression fitting remains in place.
- Check for water in the well using the water level indicator. If water is present in the well, do not sample the well.
- Fit well cap with push-to-connect tubing fitting onto soil vapor monitoring well.
- Remove the cap on the summa canister using a crescent wrench.

- Attach tubing to the soil vapor monitoring well, to the Summa canister, and to the inlet of the vacuum as shown below:



- All valves, both on summa canisters and ball valves should be closed.
- Open the ball valve to the well and open the ball valve to the vacuum pump.
- Turn on the vacuum pump to purge the well. Allow the vacuum pump to run for the calculated time period.
- Turn off the vacuum pump.
- Close the ball valve to the vacuum pump.
- Open the ball valve to the summa canister.
- Slowly open the valve on the summa canister to collect the sample. You will hear a hissing sound while the summa is filling. Slowly, open the valve on the summa canister completely. When the summa canister is filled, the hissing sound will stop. If a sample is to be collected over a time period e.g.,30 min or 6 hours, a precalibrated regulator is attached to the summa canister to control the flow rate.
- When the summa canister is filled, close the valve on the summa canister.
- Disconnect the tubing from the summa canister.
- Replace the cap on the summa canister and tighten using a crescent wrench.
- Prepare a sample label including the project name, sample ID, analysis required, date and time of collection. Affix the sample label to the tag on the summa canister (do not affix the label to the summa canister itself).
- Remove the tubing from the soil vapor monitoring well and the vacuum pump. All tubing and fittings will need to be decontaminated before it is used again.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

4.3 Indoor Air Sampling

Objective

- To collect a sample of indoor air for the laboratory analysis of volatile organic compounds.

Equipment

- Passivated stainless steel vacuum sampling vessel (summa canister), provided by the laboratory
- Pre-calibrated flow regulator, provided by the laboratory
- Timer

Procedure

- Complete indoor air sampling when conditions are optimal for vapor intrusion. Prepare the structure for sampling in accordance with regulatory guidelines. The intrusion of vapors into a building is facilitated when the outdoor temperature is less than the indoor temperature, during rain events, and on windy days.
- Determine the desired sampling time interval. As a general rule, longer sampling intervals provide more representative samples.
- At the sampling location, remove the protective cap on the summa canister and replace it with the pre-calibrated flow regulator.
- Open the valve on the summa canister. Open the valve on the regulator. Note the start time.
- The summa canister will collect a sample for the time period determined by the pre-calibrated flow regulator.
- At the end of the sampling interval, close the valve on the regulator and on the summa canister. Remove the regulator from the canister and replace it with the protective cap.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

5.0 BIOLOGICAL SAMPLING

5.1 Heterotrophic Plate Counts

Objective

- Quantitatively assess the microbial population present in groundwater.

Equipment

- Bio sample containers
- Latex gloves
- Bailers
- Rope

Procedure

- Purge each well as described in Section 3.0.
- Don a new pair of latex gloves for each sample.
- Using a bailer, collect a sample of groundwater from the well. Fill the bio sample container to the fill line marked on the container. Close and seal container.
- Label the container with the site name, sample ID, date and time.
- Store samples in a cooler on ice.
- Deliver directly to the laboratory.

5.2 PCR Testing

Objective

- Quantitatively assess RNA expression of two enzymes, PHE and PM-1, associated with aerobic biodegradation of benzene and MTBE, respectively.

Equipment

- Peristaltic pump with tubing
- Sample filters, including luer-lock adapter, red rubber cap and clear luer plug, provided by the laboratory
- Sample labels, provided by the laboratory
- Preservative, provided by the laboratory
- Syringe, provided by the laboratory
- Falcon tube, provided by the laboratory
- Sterilized plastic two liter containers
- Sterilized plastic one liter graduated cylinders
- Nitrile gloves
- Distilled water
- Detergent
- Paper towels
- Bailers
- Rope

Procedure

- Purge each well as described in Section 3.0.
- Don a new pair of nitrile gloves for each sample.
- Using a bailer, gently collect a sample of groundwater from the well to minimize the turbidity of the sample. Fill two sterilized plastic two liter containers.
- Attach the luer-lock adapter to the influent end of the sample filter
- Attach the hose barb end of the adapter to the effluent tubing from the peristaltic pump.
- Insert the influent tubing from the peristaltic pump into the first container of sample water.
- Turn on the peristaltic pump.
- Use a graduated cylinder to measure the volume of water passed through the filter.
- Filter one to two liters of water. Record the volume of water filtered.
- If the filter clogs before one liter has been filtered, record how much water was passed through the first filter, and then collect an additional filter, also recording the volume of water that went through the second filter. Do not use more than four filters.
- Turn off the peristaltic pump.
- Remove the filter from the tubing and remove the luer-lock adapter from the filter.
- Use a syringe to inject three milliliters of preservative through each filter.
- Cap the effluent end of the filter using the red rubber cap.
- Cap the influent end of the filter using the clear luer plug.
- Place the filter in the falcon tube provided by the laboratory
- Label the falcon tube with the site name, sample ID, requested analysis, volume filtered, date and time.
- Store sample filters in a cooler on ice. Samples must be received by the laboratory within 24 hours.
- Decontaminate the peristaltic pump with detergent after each sample. Rinse with copious amounts of deionized water.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

6.0 DISCHARGE MONITORING

6.1 Water

Objectives

- Quantitatively assess contaminant concentrations in the groundwater influent, midfluent and effluent of the remediation system to evaluate system performance, mass removal and carbon consumption and to meet applicable discharge permit requirements.

Equipment

- Sample containers
- pH meter
- Sample labels
- Latex gloves
- Plastic cups

Procedure

- Determine the parameters to be analyzed in accordance with the discharge permit or NPDES permit.
- If the remediation system is not actively discharging, set the system to discharge. Refer to the system operation and maintenance manual.
- Don a new pair of latex gloves for each sample.
- Open the effluent sample port and collect the sample in a plastic cup. Discard the first cup of water collected.
- Use the second cup of water to fill the sample containers.
- Measure the pH of the sample (see section 9.1.3).
- Prepare sample labels including the project name, sample ID, analysis required, date and time of collection. Affix the sample labels to the sample containers.
- Follow the same procedure for collection of influent and midfluent samples, using a clean plastic cup for each sample.
- Store samples in a cooler on ice.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

6.2 Air

Objectives

- Quantitatively assess contaminant concentrations in the groundwater influent, midfluent and effluent of the remediation system to evaluate system performance, mass removal and carbon consumption

Equipment

- 22 cc evacuated sample containers, provided by the laboratory
- 50 cc disposable syringe and needle, provided by the laboratory
- Sample labels, provided by the laboratory
- Latex gloves

Procedure

- Attach syringe needle to the syringe. If the sampling location is under vacuum, attach a stopcock between the syringe and the needle.
- Insert the needle through the septum of the effluent sample port into the air stream.
- Take 50 cc sample and discard.
- Take 40 cc sample into the syringe.
- Immediately insert syringe needle through the septum of the sample container. Compress all of the 40 cc sample into the sample container.
- With the plunger compressed, quickly remove the syringe from the septum, keeping the needle in line so as not to increase the size of the puncture.
- Follow the same procedure for collection of influent and midfluent samples.
- Store samples at ambient air temperature.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

7.0 SAMPLE SHIPMENT

7.1 Chain-of-Custody Forms

Objective

- Prepare a chain-of-custody form to accompany the samples to the laboratory.

Equipment

- Blank chain-of-Custody (COC) form

Procedure

Complete the laboratory-provided chain-of-custody form with the following information:

- Name of IGI contact
- City/State collected
- Site name
- Facility ID#
- Name and signature of individual responsible for sample collection
- List of sample IDs
- Type of media (i.e. groundwater, soil, air)
- Date and time of collection for each sample
- Number of containers per sample
- Analysis required / container size and type / preservative
- Date and time of relinquishment to shipper
- Signature of relinquisher

Retain one copy of the form. Ship the original form with the samples to the laboratory (see section 7.2).

7.2 Shipping

Objective

- Ship samples to the laboratory for analysis.

Equipment

- Samples

- Completed chain-of-custody form
- Cooler (groundwater samples, soil samples, air samples in Tedlar bags or glass vials)
- Cardboard box (air samples in summa canisters)
- Ice (for groundwater or soil samples)
- Bubble wrap
- Cooler liner
- Plastic zipper bags (1-gallon size)
- Zip ties
- Shipping labels
- Packing tape

Procedure

- Store soil and groundwater samples on ice or in a refrigerator until shipment. Air samples do not need to be refrigerated.
- For samples to be shipped in a cooler:
    - Line the cooler with bubble wrap to prevent breakage of sample containers during shipment.
    - Place a heavy gauge plastic bag (cooler liner) inside the cooler to prevent water leakage.
    - Place samples in plastic zipper bags inside the liner.
    - Fill the remaining void space in the cooler with ice (soil and groundwater samples only).
    - Twist the top of the cooler liner to seal it and use a zip tie to hold the cooler liner shut.
    - Place the chain of custody form in a plastic bag and attach it to the inner lid of the cooler.
    - Place a signed custody seal over the cooler seal.
- For summa canisters:
    - Wrap each summa canister with bubble wrap and place it in the cardboard box.
    - Fill the remaining void space with extra bubble wrap
- Seal the cooler or box with packing tape.
- Affix the shipping label to the cooler or box.
- Ship the cooler to the laboratory via overnight courier service.

8.0 ANALYTICAL LABORATORY QUALITY CONTROL

Objective

- Ensure that contracted analytical testing is performed in accordance with EPA guidelines.
- Ensure that analytical results meet quality standards.
- Measure parameters to the lowest practical quantitation limit.
- Ensure that data is accurately transferred from lab reports to project files.

Practices in Place

- Contract laboratories must maintain Pennsylvania certification for environmental testing.

- IGI reviews laboratory reports to confirm that surrogate recoveries are within acceptable limits. Acceptable limits for 8260 VOC surrogate recoveries are shown below:

Analyte	Acceptable Recovery Soils	Acceptable Recovery Groundwater
Dibromofluoromethane	79 – 126%	83 – 119%
4-Bromofluorbenzene	65 – 129%	72 – 126%
Toluene-d8	81 – 114%	82 – 116%

- After analytical data is electronically entered into the project file, a second individual verifies that the electronic data agrees with the laboratory report.
- Analytical data is stored in a historical project summary table. Trends are readily apparent in this format. The project manager may request a test rerun by the analytical laboratory if a value appears to be out-of line.
- Analytical reports are reviewed with respect to detection limits. Detection limits should be no higher that the action level for each parameter. The project manager may request that the test be rerun on a lower dilution of the sample.
- Duplicate samples are collected in the field to ensure that sampling is performed in a reproducible manner.

9.0 FIELD TESTING AND EQUIPMENT CALIBRATION

9.1 Field Testing

9.1.1 Photoionization Detectors

Objective

- Qualitatively measure relative concentrations of VOCs in soil samples.
- Establish a vertical profile of contaminant concentrations in a soil boring.

Equipment

- Photoionization Detector (model Hnu P1 101 or model Mini Rae Lite PGM7300)

Procedure (Hnu P1 101)

- Charge the unit prior to field use by plugging it into an AC outlet for 8-12 hours, using the AC adaptor.
- Attach the probe to the lamp unit.
- Attach the lamp unit to the meter unit.
- Turn the instrument on to the BATT setting. The needle on the meter will deflect to BATT CHK, verifying that the unit is charged.
- Turn the dial to STANDBY and allow the unit to warm up for five minutes.
- Zero the meter using the zero knob.
- The instrument is now ready for use.
- Make a small opening in the sample bag closure and insert the tip of the probe into the bag without touching the sample.
- Adjust the sensitivity settings, if needed, to read a value on the scale.

- Record the concentration corresponding to the maximum deflection of the needle on the meter.
- Record results in the field notebook or boring log.
- Allow the meter to return to zero before performing additional analyses.

Procedure (Mini Rae Lite PGM7300)

- Charge the unit prior to field use by plugging it into an AC outlet for 8-12 hours, using the AC adaptor and charging stand. The message "Fully charged!" is displayed when the unit is fully charged.
- Attach the probe to the unit. Attach a moisture filter to the end of the probe.
- There are four keys on the unit
  - Yes / increase key (Y/+)
  - No / decrease key (N/-)
  - Mode key ( )
  - Flashlight on/off key ( )
- In addition to their labeled functions, the Yes, No and Mode keys act as "soft keys" that control different parameters and make different selections within the unit's menus.
- Press and hold the Mode key to turn the unit on. The unit will run a self test.
- The display will show "Ready… Start sampling?"
- Press the Yes key to begin sampling. Make sure that the probe inlet and the gas outlet are free of obstructions.
- The display will show a value in ppm. The unit has a measuring range of 0.1 to 5,000 ppm.
- Make a small opening in the sample bag closure and insert the tip of the probe into the bag without touching the sample.
- Record the concentration corresponding to the maximum value shown on the display.
- Record the results in the field notebook or boring log.
- Allow the meter to return to zero before performing additional analyses.
- Press the No key to stop sampling. The display will show "Stop sampling?" Press the Yes key to stop the pump.
- Press and hold the Mode key for five seconds to turn the unit off.

9.1.2 Air Velocity Meter

Objectives

- Quantitatively measure air flow rate and temperature in treatment system air streams.

Equipment

- VelociCalc® Air Velocity Meter, model 9535
- Field notebook

Procedure -measures in ACFM

- The unit is powered by four AA size batteries
- Determine what size diameter pipe (inner diameter) is being tested.
- Press and hold the Power ( ) key to turn the unit on.
- In addition to their labeled functions, the top row of three keys act as "soft keys" that control different parameters and make different selections within the unit's menus.
- Press the menu key, the middle of the top keys, to access the menu. Press the Enter (key to access the Display Setup menu. Make sure the Flow and Temperature

parameters are on, and the Velocity parameter is off. Switch between parameters by using the up and down arrow keys. Turn the parameters on or off by using the left and right soft keys. Only two of the three parameters can be on at any one time. Press the Enter key to save any changes made.

- In the main menu, scroll down to access the "Flow Setup" menu. Press Enter. The Flow type should be "Round duct." If it is not set on "Round Duct," press the Enter key with "Flow Type" highlighted and scroll up or down until "Round Duct" is selected, and press Enter.
- In the Flow Setup menu, scroll down until "Enter Settings" is highlighted. Press Enter. Using the up and down keys, change the value on this screen to match the diameter of the pipe being measured. The value can change from 1 to 500 inches. Press Enter to save any changes.
- Press the Escape (ESC) key to exit the Flow Setup menu.
- Press Escape to exit the Menu and access the data screen.
- Extend the probe. Do not hold the cable while extending the probe as this prevents the probe from extending.
- At the sample port, there is a ¼" ball valve. Open the valve and insert the end of the probe. The probe is directional. There is a dimple on the threads at one end of the probe. The dimple is to face upstream.
- The Display should show "Actual" in the top left corner, a battery bar in the top right corner and two data values, air flow rate (actual cubic feet per minute or ACFM) and temperature (^{O}F).
- Take three readings at each sample location. Record the readings in the field notebook.
- Press and hold the Power key to turn the unit off.
- Retract the probe.

9.1.3 Portable Water Quality Meters

Objectives

- pH - Measure relative acidity or alkalinity in groundwater as indicated by a logarithmic scale of Hydrogen ion concentration.
- Conductivity - Measure the concentration of dissolved solids in a groundwater sample as a function of current conduction.
- ORP - Measure relative oxidizing or reducing capability of groundwater by measuring voltage at an electrode.
- Temperature - Measure groundwater temperature.

Equipment

- Portable water quality meters as listed below
- Plastic cup
- Paper towels
- Rinse water
- Water sample

Procedures

Oakton ECO Tester pH2 (pH)

- Remove the protective cap at the tip of the instrument to expose the electrode. Rinse the tip with tap water to remove storage solution and blot with a paper towel to remove excess liquid.
- Immerse the electrode in 20 mm of sample.
- Press and release the bottom button (Ŏ) to turn on the meter.
- Swirl gently to clear any trapped air bubbles and create a homogenous sample and allow the reading to stabilize.
- Record the pH reading.
- Press and release the bottom button (Ŏ) to turn off the meter.
- Rinse the tip of the instrument with tap water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Hanna pHep® Meter HI98127 (pH and Temperature)

- Remove the protective cap at the tip of the instrument to expose the electrode. Rinse the tip with tap water to remove storage solution and blot with a paper towel to remove excess liquid.
- Immerse the electrode in 20 mm of sample.
- Press and release the left button (Ŏ/MODE) to turn on the meter.
- Swirl gently to clear any trapped air bubbles and create a homogenous sample.
- Allow the reading to stabilize. The value is stabilized when the clock icon disappears.
- Record the pH and temperature readings.
- To change ◦C/◦F, press and hold the left button (Ŏ /MODE) until "OFF" on the display is replaced by "TEMP". Use the right button (SET/HOLD) to change ◦C/◦F.
- Press and release the bottom button (Ŏ/MODE) to turn off the meter.
- Rinse the tip of the instrument with tap water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Oakton TDSTestr 11+ Meter (Conductivity and Temperature)

- Remove the protective cap at the tip of the instrument to expose the electrode. Rinse the electrode with de-ionized water prior to use. Blot dry with a paper towel.
- Immerse the electrode in the test solution making sure that it is fully immersed.
- Press the middle button (ON/OFF) to turn on the meter.
- Swirl gently to clear any trapped air bubbles and create a homogenous sample.
- Allow the reading to stabilize.
- The upper display shows the measured conductivity / TDS reading and the lower display shows the temperature reading.
- To change the temperature reading between Celsius and Fahrenheit, press the left button (°C/°F).
- Record the conductivity and temperature readings.
- Press the middle button (ON/OFF) to turn off the meter.
- Rinse the electrode with deionized water to prevent cross contamination between measurements and blot with a paper towel to dry.
- Place the protective cap on the instrument. THIS INSTRUMENT IS STORED DRY.

Oakton ORPTestr 10 Meter (ORP)

- Remove the protective cap at the tip of the instrument to expose the electrode. Rinse the tip with tap water to remove storage solution and blot with a paper towel to remove excess liquid.
- Immerse the electrode about 20-30 mm in the sample to be measured.
- Press and release the middle button (ON/OFF) to turn on the meter.
- Stir once and let the reading stabilize for 2 to 5 minutes.
- Record the ORP reading.
- Press and release the middle button (ON/OFF) to turn off the meter.
- Rinse the tip of the electrode with tap water and blot with a paper towel to remove excess liquid.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Hanna Combo Meter HI98129 (pH, Conductivity, and Temperature)

- Remove the protective cap at the tip of the instrument to expose the electrode and rinse with tap water to remove storage solution. Blot with paper towel to remove excess liquid.
- Immerse the electrode in the sample.
- Press and release the left button (Ŏ/MODE) to turn the meter on.
- Confirm that the CAL indicator is steady and not blinking. This means that the meter is calibrated.
- Press and release the right button (SET/HOLD) repeatedly until pH appears in the upper right of the display.
- When the clock-face symbol disappears, record the pH and temperature readings.
- Press and release the right button (SET/HOLD) repeatedly until ppm appears in the upper right of the display.
- When the clock-face symbol disappears, record the conductivity reading in ppm.
- Press and release the left button (Ŏ/MODE) to turn the meter off.
- Rinse the tip of the instrument in water and blot on a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Hanna Combo Meter HI98121 (pH, ORP, and Temperature)

- Remove the protective cap at the tip of the instrument to expose the electrode and rinse with tap water to remove storage solution. Blot with paper towel to remove excess liquid.
- Immerse the electrode in the sample.
- Press and release the left button (Ŏ/MODE) to turn the meter on.
- Confirm that the CAL indicator is steady and not blinking. This means that the meter is calibrated.
- Press and release the right button (SET/HOLD) repeatedly until pH appears in the upper right of the display.
- When the clock-face symbol disappears, record the pH and temperature readings.
- Press and release the right button (SET/HOLD) repeatedly until mV appears in the upper right of the display.
- When the clock-face symbol disappears, record the ORP reading in mV.
- Press and release the left button (Ŏ/MODE) to turn the meter off.

- Rinse the tip of the instrument in water and blot on a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

9.1.4 CHEMetrics Field Test Kits

Objectives

- Quantitatively measure the concentration of dissolved oxygen, dissolved iron, total iron, manganese, nitrate and / or phosphate in a groundwater sample.

Equipment

- CHEMetrics Dissolved Oxygen kit (K-7512)
- CHEMetrics Iron kit (K-6010)
- CHEMetrics Manganese kit (K-6502)
- CHEMetrics Nitrate kit (K-6904)
- CHEMetrics Phosphate kit (K-8510)
- Bailer
- Rope
- Plastic cup
- Latex gloves
- Protective eyewear

Procedures

- Don latex gloves and protective glasses. For each sample collected, don a new pair of latex gloves.
- Keep all ampoules and Comparators out of direct sunlight.
- Slowly and carefully remove a bailer full of water from the well.
- Collect a sample from the bottom of the bailer by placing the bailer drain insert (provided with each bailer) into the bottom of the bailer to dislodge the bailer float ball. The goal is to provide a gentle stream of water into the sample cup, as a fast stream of water will affect the amount of oxygen in the sample.
- Place spent ampoules in a sharps container.

Dissolved Oxygen (K-7512)

- Immediately upon filling the cup, immerse the ampoule in the sample and snap the tip. The ampoule contains a reagent and a vacuum, so the proper amount of water is pulled into the ampoule.
- Tilt the ampoule back and forth so that the air bubble inside goes from end to end four times. Wait two minutes for color development.
- The ampoules in the Comparator correspond to different dissolved oxygen concentrations. Compare the test ampoule to the ampoules in the Comparator to find a color match. Record the corresponding concentration in the field notebook.

Dissolved Iron (K-6010)

- Immerse the ampoule in the sample and snap the tip. The ampoule contains a reagent and a vacuum, so the proper amount of water is pulled into the ampoule.
- Tilt the ampoule back and forth so that the air bubble inside goes from end to end four times. Wait one minute for color development.

- The ampoules in the Comparator correspond to different dissolved iron concentrations. Compare the test ampoule to the ampoules in the Comparator to find a color match. Record the corresponding concentration in the field notebook.

Total Iron (K-6010)

- Fill the sample cup from the kit to the 25 mL mark with the sample.
- Add 5 drops of A-6000 activator solution from the kit. Stir briefly.
- After four minutes, stir the sample once again
- Immerse the ampoule in the sample and snap the tip. The ampoule contains a reagent and a vacuum, so the proper amount of water is pulled into the ampoule.
- Tilt the ampoule back and forth so that the air bubble inside goes from end to end four times. Wait one minute for color development.
- The ampoules in the Comparator correspond to different total iron concentrations. Compare the test ampoule to the ampoules in the Comparator to find a color match. Record the corresponding concentration in the field notebook.

Manganese (K-6502)

- Fill the sample cup from the kit to the 5 mL mark with the sample.
- Add 5 drops of A-6500 activator solution from the kit. Stir briefly with the tip of the ampoule to mix the contents of the sample cup.
- Immerse the ampoule in the sample and snap the tip. The ampoule contains a reagent and a vacuum, so the proper amount of water is pulled into the ampoule.
- Tilt the ampoule back and forth so that the air bubble inside goes from end to end four times. Wait one minute for color development.
- The ampoules in the Comparator correspond to different manganese concentrations. Compare the test ampoule to the ampoules in the Comparator to find a color match. Record the corresponding concentration in the field notebook.

Nitrate (K-6904)

- Fill the reaction tube from the kit to the 15 mL mark with the sample.
- Empty the contents of one Cadmium Foil Pack from the kit into the reaction tube. Cap the reaction tube and shake it vigorously for exactly three minutes. Allow the sample to sit undisturbed for two minutes. WARNING: CADMIUM IS POISONOUS. Spent cadmium foil packs should be placed in a dedicated container until disposal.
- Pour 10 mL of the sample into the sample cup from the kit, being careful not to transfer any of the cadmium particles to the sample cup.
- Immerse the ampoule in the sample and snap the tip. The ampoule contains a reagent and a vacuum, so the proper amount of water is pulled into the ampoule.
- Tilt the ampoule back and forth so that the air bubble inside goes from end to end four times. Wait 10 minutes for color development.
- The ampoules in the Comparator correspond to different nitrate concentrations. Compare the test ampoule to the ampoules in the Comparator to find a color match. Record the corresponding concentration in the field notebook.

Phosphate (K-8510)

- Fill the sample cup from the kit to the 25 mL mark with the sample.
- Add 2 drops of A-8500 activator solution from the kit. Cap the sample cup and shake it to mix the contents well.

- Immerse the ampoule in the sample and snap the tip. The ampoule contains a reagent and a vacuum, so the proper amount of water is pulled into the ampoule.
- Tilt the ampoule back and forth so that the air bubble inside goes from end to end four times. Wait two minutes for color development.
- The ampoules in the Comparator correspond to different phosphate concentrations. Compare the test ampoule to the ampoules in the Comparator to find a color match. Record the corresponding concentration in the field notebook.

9.2 Equipment Calibration and Maintenance

Objective

- Confirm that field equipment is functioning as designed.
- Ensure that data obtained using the equipment is accurate.
- Ensure that equipment is functioning properly prior to going into the field.

9.2.1 Photoionization Detectors

Equipment

- Photoionization Detector (model Hnu P1 101 or Mini Rae Lite PGM7300)
- Calibration gas—Isolbutylene 100ppm
- Regulator
- Equipment Calibration Log

Procedure:

Hnu P1 101

- Attach the lamp unit and probe to the meter unit and turn the instrument on.
- Allow the instrument to warm up for five minutes on the standby setting.
- Turn the detector dial to 0-200.
- Using the zero knob, adjust the needle to read zero on the scale.
- Attach the regulator to the calibration gas cylinder.
- Place the open end of the tubing attached to the regulator onto the tip of the probe.
- Open the valve on the regulator to allow the gas to flow into the probe.
- Adjust the span knob such that the reading on the dial is 67 ppm.
- The instrument is now calibrated for benzene detection.
- Close the regulator valve and detach the tubing from the probe.
- Allow the probe to equilibrate to zero in ambient air before turning the unit off or to standby.
- Record the date, instrument, calibration reading, lot number of calibration gas and initials of performer on the Log Sheet.

Mini Rae Lite PGM7300

- Attach the probe to the unit and turn the instrument on, as described in section 9.1.1.
- Press and hold the Mode and No keys simultaneously to enter the calibration menu.
- The unit will ask for a password. Press the Mode key to bypass this screen (a password is not necessary to calibrate).

- The unit will display "Zero Calib" and "Span Calib." With Zero Calib highlighted, press the Yes key to begin zero calibration. The display will show "Apply zero Gas…" Press Yes to begin calibrating. The unit will calibrate for 30 seconds.
- Once the unit has been calibrated to zero, "Span Calib" will be highlighted. Apply the calibration gas to the probe. Press Yes to begin span calibration. The display will show "C. Gas = Isobutene Span = 100 ppm Please apply gas 1…" Press Yes to begin calibrating. The unit will calibrate for 30 seconds.
- Once the unit has been calibrated to Isobutene, press Mode to return to the main screen.
- Record the date, instrument, calibration reading, lot number of calibration gas and initials of performer on the Log Sheet.

9.2.2 Air Velocity Meter

The VelociCalc® Air Velocity Meter, model 9535, must be returned to the manufacturer for recalibration: TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126-3396, (800) 874-2811.

9.2.3 Portable Water Quality Meters

Equipment

- Portable water quality meters
- Equipment Calibration Log
- Calibration solutions (pH 7.0, pH 4.0, conductivity 1382 ppm, ORP 200-275mV, TDS 1413 µS)
- Thermometer
- Soapy water
- Tap water
- Deionized water
- Plastic cup
- Paper towels
- Battery tester
- Batteries – size 357

Procedure

- Dip a paper towel in soapy solution, squeeze out excess liquid and wipe the meter casing. Next wipe the meter with a damp paper towel to remove any soapy residue. Dry the outside of the meter using a dry paper towel.
- Check the batteries monthly and replace them quarterly or as indicated on the meter display. All meters use 4 - size 357 batteries. Turn on the battery tester by turning the dial indicator to 20V. Remove the caps from the red (positive) and black (negative) electrodes. Place the electrodes on their respective ends of the battery. The new batteries should register over 1.5 volts. Any batteries registering less than 1.5 should be replaced. Do not put new batteries with old ones.
- Remove the protective cap at the tip of the instrument to expose the electrode. Rinse the protective cap and the tip of the electrode with tap water to remove storage solution and silt deposits from use in the field. If the deposits are still evident, use Q-tips and dampened paper towels to remove them. Blot with a dry paper towel to remove excess liquid.

- After cleaning, condition the ORP meters, if necessary, by immersing the meter in a reducing (HI7091) or oxidizing (HI7092) solution for 30 minutes.
- Calibrate the meters as described in the separate calibration procedures below.
- If a meter fails to calibrate properly, immerse the electrode in cleaning solution for five minutes. Rinse using copious amounts of tap water and then proceed to calibrate. (In rare cases, the meter may need to be immersed in cleaning solution for 30 minutes.)

Oakton ECO Tester pH2

- Calibration Solutions: pH 7 Standard, pH 4 Standard
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 20 mm of 7.0 pH calibration standard.
- Press and release the bottom button (Ŏ) to turn on the meter.
- Gently stir the meter in the pH 7.0 standard and wait for the value to stabilize at or near pH 7.0.
- Press and release the middle button (cal). The display will flash CAL, then show a flashing default reading.
- To confirm the calibration, press and release the top button (hold/ent). Wait for the auto confirmation (ENT). You have successfully completed the first calibration point.
- Rinse the tip to remove pH 7.0 standard solution and blot with a paper towel to remove excess liquid.
- Immerse the electrode in 20 mm of 4.0 pH calibration standard. Gently stir and wait for the value to stabilize at or near pH 4.0.
- Press and release the middle button (cal). The display will flash CAL, then show a flashing default reading.
- To confirm the calibration, press and release the top button. Wait for the auto confirmation (ENT). You have successfully completed the second calibration point.
- In the calibration log, record the date, calibration standard value, calibration standard lot number, instrument reading after calibration, and initials of personnel completing the calibration.
- Turn the instrument off by depressing the bottom button.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

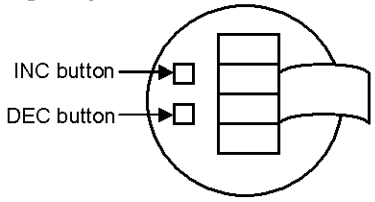
Hanna pHep® Meter HI98127

- Calibration Solutions: pH 7 Standard, pH 4 Standard
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 20 mm of 7.0 pH calibration standard.
- Press and release the left button (Ŏ /MODE) to turn on the meter.
- Gently stir the meter in the pH 7.0 standard and wait for the value to stabilize at or near pH 7.0.
- Press and hold the left button (Ŏ /MODE) until “OFF” on the display is replaced by ”CAL”. Release the button. The display will read “pH 7.01 USE”. After the buffer is recognized and accepted, the display will read “pH 4.01 USE”. You have successfully completed the first calibration point.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 20 mm of 4.0 pH calibration standard. Gently stir and wait for the value to stabilize at or near pH 4.0.

- Once the pH 4.0 buffer is recognized and accepted, the value will be displayed with the "OK 2" message. The meter will then return to normal measuring mode. When the calibration is completed, the "CAL" tag is turned on.
- Rinse the tip to remove pH 4.0 standard solution and blot with a paper towel to remove excess liquid.
- Immerse the electrode in 20 mm of tap water in a cup. Place thermometer in cup to compare readings.
- Gently stir the meter in the water and wait for the temperature value to stabilize.
- To change ◦C/◦F, press and hold the left button (Ŏ /MODE) until "OFF" on the display is replaced by "TEMP". Use the right button (SET/HOLD) to change ◦C/◦F.
- Press the left button (Ŏ /MODE) twice to enter the normal measuring mode.
- In the calibration log, record the date, calibration standard value, calibration standard lot number, instrument reading after calibration, and initials of personnel completing the calibration.
- Turn the instrument off by depressing the left button (Ŏ /MODE).
- Rinse the tip of the instrument in water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Oakton TDSTestr 11+Meter

- Calibration Solution: 1382 ppm
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 20 mm of 1382ppm calibration standard.
- Press the middle button (On/OFF) to turn on the tester. Swirl gently to create a homogenous sample and allow the reading to stabilize.
- Unscrew and remove the lid from the meter. Locate two white buttons beside the battery compartment. These buttons are used to increase (INC) and decrease (DEC) the display values.



- Press the INC or DEC button to enter calibration mode. "CAL" appears in the screen. The upper display shows the measured conductivity/TDS reading of the solution based on previous calibration and the lower display shows the default (uncalibrated) conductivity/TDS reading.
- Adjust the upper display to the conductivity/TDS calibration solution value by pressing the INC or DEC button.
- Wait 5 seconds for the tester to automatically confirm the calibration by displaying "CO" and return to measurement mode.
- Rinse the electrode with deionized water to remove standard solution and blot with a paper towel to dry.
- Immerse the electrode in 20 mm of a solution of known temperature. Press the middle button to turn on the tester. Swirl gently to remove bubbles and create a homogenous sample and allow the reading to stabilize.
- Press the left button to select the desired unit of measurement (◦C/◦F).
- Press the INC or DEC button to enter calibration mode. "CAL" appears in the screen. Immediately press the (◦C/◦F) button to switch to the temperature calibration mode. The upper display shows the measured temperature reading of the solution based on previous calibration and the lower display shows the default (uncalibrated) temperature reading.

- Adjust the upper display to the temperature calibration solution value by pressing the INC or DEC button.
- Wait 5 seconds for the tester to automatically confirm the calibration by displaying "CO" and return to measurement mode.
- In the calibration log, record the date, calibration standard value, calibration standard lot number, instrument reading after calibration, and initials of personnel completing the calibration.
- Replace the lid on the meter over battery compartment.
- Press the middle button (On/OFF) to turn off the tester.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Place the protective cap on the instrument. THIS INSTRUMENT IS STORED DRY.

Oakton ORPTestr 10 Meter

- Calibration Solution: ORP 200-275mV
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in ORP calibration standard.
- Press and release the middle button (ON/OFF) to turn on the meter.
- Leave the ORP meter in the calibration solution for 2 to 5 minutes until the readings stabilize. Be sure the whole sensor is immersed.
- Press the left button (CAL) to enter the calibration mode. The screen will switch to a dual display with the upper display flashing the relative mV value to be calibrated and the lower display showing the default measurement value of the sample. "CAL" replaces "MEAS" on the display to indicate that the tester is in calibration mode.
- Immediately press and hold the right button (HOLD/ENT) to scroll the reading to match the value of the calibration standard. This value only scrolls up. Once the value reaches its maximum, it will resume scrolling up from zero.
- To complete the calibration, release the right button (HOLD/ENT) and wait for 5 seconds for automatic confirmation. The upper display will stop flashing and the lower display will read "CO" before the screen returns to the single display measurement mode. This means that the machine is calibrated.
- In the calibration log, record the date, calibration standard value, calibration standard lot number, instrument reading after calibration, and initials of personnel completing the calibration.
- Press and release the middle button (ON/OFF) to turn off the meter.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Hanna Combo Meter HI98129 (pH, Conductivity, and Temperature)

- Calibration Solutions: pH 7 Standard, pH 4 Standard, 1413 µS Standard, 1382 ppm Standard
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 7.0 pH calibration standard.
- Press and release the left button (Ŏ /MODE) to turn on the meter.
- Select "pH" as the desired testing parameter by depressing and releasing the right button (SET/HOLD) repeatedly until pH appears in the upper right of the display.
- When the clock-face symbol disappears, press and hold the left button until CAL is displayed in the lower screen. Release the button. The display will read pH 7.01 USE. After recognition of the buffer the meter will display pH 4.01 USE. Rinse the

electrode thoroughly and blot with a paper towel to remove excess liquid. Immerse the electrode in 4.0 pH standard. When the second buffer is recognized, the meter will display OK for 1 second and the meter will return to normal measuring mode.

- Confirm that the CAL is steady and not blinking. This means that the machine is calibrated.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 1413 µS/cm calibration standard.
- Select "ppm" as the desired testing parameter by depressing and releasing the right button (SET/HOLD) repeatedly until ppm appears in the upper right of the display.
- When the clock-face symbol disappears, press and hold the left button until CAL is displayed in the lower screen. Release the button. The display will read 1382 USE. After recognition of the buffer the meter will display OK for one second and the meter will return to normal measurement mode.
- Confirm that the CAL is steady and not blinking. This means that the machine is calibrated.
- Select "µS" as the desired testing parameter by depressing and releasing the right button (SET/HOLD) repeatedly until µS appears in the upper right of the display.
- When the clock-face symbol disappears, press and hold the left button until CAL is displayed in the lower screen. Release the button. The display will read 1413 USE. After recognition of the buffer the meter will display OK for 1 second and the meter will return to normal measurement mode.
- Confirm that the CAL is steady and not blinking. This means that the machine is calibrated.
- Rinse the tip of the instrument in water and blot on a paper towel.
- Immerse the electrode in a cup of tap water with a thermometer.
- When the clock-face symbol disappears, record the temperature that appears in the lower right of the display and compare it with the known temperature on the thermometer.
- To change the temperature unit (from ◦C to ◦F), press and hold the left button until TEMP and the current temperature unit are displayed on the screen (E.g. TEMP ◦C). Use the right button to change the temperature unit and then press the left button twice to return to normal measuring.
- In the calibration log, record the date, calibration standard value, calibration standard lot number, instrument reading after calibration, and initials of personnel completing the calibration.
- Turn the instrument off by depressing the left button.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

Hanna Combo Meter HI98121 (pH, ORP, and Temperature)

- Calibration Solutions: pH 7 Standard, pH 4 Standard, ORP 200-275 mV
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 7.0 pH calibration standard.
- Press and release the left button (Ŏ /MODE) to turn on the meter.
- Select "pH" as the desired testing parameter by depressing and releasing the right button (SET/HOLD) repeatedly until pH appears in the upper right of the display.

- When the clock-face symbol disappears, press and hold the left button (Ŏ /MODE) until CAL is displayed in the lower screen. Release the button. The display will read pH 7.01 USE. After recognition of the buffer the meter will display pH 4.01 USE.
- Rinse the electrode thoroughly and blot with a paper towel to remove excess liquid. Immerse the electrode in 4.0 pH standard. When the second buffer is recognized, the meter will display OK for 1 second and the meter will return to normal measuring mode.
- Confirm that the CAL is steady and not blinking. This means that the machine is calibrated.
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in 200-275 mV calibration standard.
- Select "mV" as the desired testing parameter by depressing and releasing the right button (SET/HOLD) repeatedly until mV appears in the upper center of the display.
- When the clock-face symbol disappears, the meter should read within the standard range of 200-275 mV.
- The ORP range is factory calibrated. Contact the nearest Hanna Service Center if ORP recalibration is needed. .
- Rinse the tip of the instrument in water and blot with a paper towel.
- Immerse the electrode in a cup of tap water with a thermometer.
- When the clock-face symbol disappears, record the temperature that appears in the lower right of the display and compare it with the known temperature on the thermometer.
- To change the temperature unit (from ◦C to ◦F), from the measurement mode press and hold the left button (Ŏ /MODE) until TEMP and the current temperature unit are displayed on the screen (e.g. TEMP ◦C). Use the right button (SET/HOLD) to change the temperature unit and then press the left button (Ŏ /MODE) twice to return to normal measuring.
- In the calibration log, record the date, calibration standard value, calibration standard lot number, instrument reading after calibration, and initials of personnel completing the calibration.
- Turn the instrument off by depressing the left button (Ŏ /MODE).
- Rinse the tip of the instrument in water and blot with a paper towel.
- Make sure there is storage solution in the protective cap and place it on the instrument.

10.0 AQUIFER TESTING AND PILOT TESTING

10.1 Slug Testing

Objective

- Complete slug in and slug out tests to estimate the permeability of the aquifer.

Equipment

- In-Situ Mini-Troll in-well data logging pressure transducer with cable
- Laptop with Win-Situ software installed
- In-Situ ComIT Adapter
- Extra AA batteries for the Mini-Trolls (each Mini-Troll uses two)
- Extra CV2 battery for the ComIT Adapter

- Slug of a known volume (1" or 2" diameter PVC, filled with water and capped on both ends)
- Water level indicator
- Latex gloves
- Tape measure
- Rope
- Cones
- Decontamination materials

Procedure

- Don latex gloves.
- Measure the depth to water.
- Measure the total depth of the well.
- Calculate the thickness of the water column.
- Lower the Mini-Troll into the well so that the bottom of the troll is 6 inches to 1 foot above the bottom of the well. Verify that the Mini-Troll is not in contact with sediment at the bottom of the well.
- Secure the cable to the flush mount to prevent movement within the well.
- Connect the cable to the computer via the communication interface. Define the test parameters for the slug-in phase of the test. Use the logarithmic scale for data collection.
- Tie rope or string to the slug and lower it into the well so that the bottom of the slug is just above the water surface. Begin data collection by the Mini-Troll.
- Immediately lower the slug quickly but smoothly into the water column so that the top of the slug remains just below the water surface. The string is then tied to the flush mount to prevent movement within the water column. This is termed a "slug-in" test.
- When the depth to water has returned to its original static level, end data collection by the Mini-Troll.
- Define a new test with the computer for the slug-out phase of the slug test.
- Begin data collection by the Mini-Troll.
- Immediately remove the slug quickly but smoothly from the well. This is termed a "slug-out" test.
- When the depth to water has returned to its original static level, end data collection by the mimiTROLL.
- Download data from the Mini-Troll onto the computer for analysis. Disconnect the Mini-Troll from the laptop computer and remove the Mini-Troll from the well.
- Decontaminate the slug and Mini-Troll using a soap scrub followed by multiple water rinses.
- Transfer the data into spreadsheets provided by the US Geological Survey (USGS) for use in single well analyses using the Bouwer-Rice Method to calculate permeability.

10.2 Pump Testing

10.2.1 Step Test

Objectives

- Conduct a step test to determine the maximum sustainable flow rate in preparation for a constant rate pump test.

Equipment

- In-Situ Mini-Troll in-well data logging pressure transducers with cable
- Laptop with Win-Situ software installed
- In-Situ ComIT Adapter
- Extra AA batteries for the Mini-Trolls (each Mini-Troll uses two)
- Extra CV2 battery for the ComIT Adapter
- Water level indicator
- Pump (i.e. submersible well pump, air-diaphragm pump, etc.)
- Power supply (12V deep cycle battery for submersible well pumps, air compressor and electrical connection for air-diaphragm pumps)
- Tubing or hose
- Large graduated cylinder
- Stopwatch
- 55-gallon drums
- Decontamination materials

Procedure

- Done latex gloves.
- Measure the depth to water of the pumping well.
- Lower the Mini-Troll into the well so that the bottom of the troll is 6 inches to 1 foot above the bottom of the well. Verify that the Mini-Troll is not in contact with sediment at the bottom of the well.
- Secure the cable to the flush mount to prevent movement within the well.
- Connect the cable to the computer via the communication interface.
- Program the Mini-Troll to begin recording data prior to the start of the pump test.
- Lower the pump into the pumping well to a level several feet above the bottom of the well and secure it to the top of the well.
- Begin pumping at a slow rate. The initial rate shall be determined in advance based on soil conditions and expected flow rates. Record the time.
- Measure the flow rate using a graduated cylinder and a stop watch. Record the flow rate in the field notebook.
- Measure the depth to water in the pumping well regularly using the water level indicator and record the measurement and the time in the field notebook.
- After a period of time, increase the flow rate. Continue to measure the flow rate and the depth to water in the pumping well.
- Continue to increase the flow rate in increments until either the maximum rate of the pump is reached or the well is dewatered.
- Stop pumping.
- Stop the test and download the data from from Mini-Troll.
- Stage the water generated during the pump test on site in 55-gallon drums for future disposal or treat with carbon and discharge in accordance with the discharge permit, if applicable.
- Decontaminate the pump and Mini-Trolls using a soap scrub followed by multiple water rinses.
- Evaluate the data to determine an appropriate sustainable pumping rate for a constant rate pump test. The goal is to induce drawdown in the well without causing the well to run dry.

10.2.2 Constant Rate Test

Objectives

- Conduct a constant rate pump test to determine the permeability of the aquifer, the maximum sustainable flow rate and radius of influence.

Equipment

- In-Situ Mini-Troll in-well data logging pressure transducers with cable
- Laptop with Win-Situ software installed
- In-Situ ComIT Adapter
- Extra AA batteries for the trolls (each troll uses two)
- Extra CV2 battery for the ComIT Adapter
- Mobile groundwater pump and treat system OR a pump (i.e. submersible well pump), power supply (i.e. 12V deep cycle battery), tubing or hose and 55-gallon drums.
- Water level indicator
- Large graduated cylinder
- Stopwatch
- Decontamination materials
- Groundwater sampling containers
- Plastic cups

Procedure

- Done latex gloves.
- Measure the depth to water of all wells.
- Mini-Trolls may be used to record changes in groundwater elevations in selected wells and/or the pumping well.
    - Lower the Mini-Troll into the selected wells so that the bottom of the troll is 6 inches to 1 foot above the bottom of the well. Verify that the Mini-Troll is not in contact with sediment at the bottom of the well.
    - Secure the cable to the flush mount to prevent movement within the well.
    - Connect the cable to the computer via the communication interface.
    - Program the Mini-Trolls to begin recording data prior to the start of the pump test.
- Lower the pump into the pumping well to a level several feet above the bottom of the well and secure it to the top of the well.
- Initiate pumping at the selected flow rate, as determined by the step test. The goal is to induce drawdown in the well without causing the well to run dry. Record the time.
- Measure the flow rate using a graduated cylinder and a stop watch. Record the flow rate in the field notebook.
- Measure the depth to water in the pumping well regularly using the water level indicator and record the measurement and the time in the field notebook.
- Periodically measure the depth to water in distal monitoring wells at the site to monitor for influence.
- Samples of the influent may be collected during the test for laboratory analysis.
    - Don a new pair of latex gloves for each sample.
    - Collect a sample of the groundwater from the effluent of the pump, prior to carbon treatment.
    - Fill VOA sample containers completely, leaving no head space in the containers.
    - Prepare a sample label including the project name, sample ID, analysis required, date and time of collection. Affix the sample label to the sample containers.

  - Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.
- At the scheduled time, discontinue pumping. This initiates the recovery phase of the pump test.
  - If using a Mini-Troll to measure recovery, program the Mini-Troll to begin logging data just before pumping is stopped. Use a log interval for measurements.
  - If recording recovery manually, measure and record the depth to water at regular intervals. Initially, measurements should be made frequently, approximately every 10 to 15 seconds. As recovery slows, the frequency of measurements may be decreased.
- When the water level has recovered to the initial level in the pumping well, the recovery phase is complete. Stop the test and download the data from each Mini-Troll.
- Stage the water generated during the pump test on site in 55-gallon drums for future disposal or treat with carbon and discharge in accordance with the discharge permit, if applicable.
- Decontaminate the pump and Mini-Trolls using a soap scrub followed by multiple water rinses.
- Transfer data into spreadsheets provided by the USGS for Cooper-Jacob single-well pumping analysis, Cooper-Jacob single-well recovery analysis, distance-drawdown analysis of a multi-well aquifer test

10.3 Soil Vapor Extraction Pilot Testing

Objectives

- Conduct a soil vapor extraction (SVE) pilot test to determine sustainable air flow rates of soil vapors from a well and the radius of vacuum influence.

Equipment

- SVE blower or other vacuum generating equipment (i.e. a vacuum truck)
- Various piping, hoses and fittings as needed to create an airtight seal between the blower and the test well. Piping should include ports to monitor vacuum and air flow at the well head and at the blower.
- Vacuum gauge (inches of mercury)
- Magnehelic gauges (inches of water)
- Wells caps with vacuum monitoring ports
- Air velocity meter
- PID meter
- Water level indicator
- Vacuum pump for air sampling
- Disposable tubing
- Tedlar bags
- Sample labels

Procedure

- Don latex gloves.
- Measure and record baseline depth to water of the test well and all distal wells to be monitored.
- For each of the distal wells, determine if the well screen is submerged. If it is, then vacuum / pressure readings are not applicable.

- For wells with exposed well screens, install a well cap having a vacuum monitoring port.
- Measure baseline vacuum / pressure of the test well and distal wells using the magnehelic gauges and record.
- Connect the SVE blower or other vacuum generating equipment to the test well.
- Start the test by turning on the blower. Record the time.
- Periodically, measure and record the following parameters:
  - Vacuum at the blower
  - Vacuum at the well head
  - Air flow rate (acfm) of the air extracted (also measure temperature and pressure/vacuum at this location to convert acfm to scfm)
  - PID reading of the air extracted
  - Vacuum / pressure of distal wells with exposed well screens
- Samples of the influent air may be collected for laboratory analysis.
  - Don a new pair of latex gloves for each sample.
  - Use tubing to attach the influent of the air sampling vacuum pump to a port before the blower.
  - Use tubing to attach the effluent of the air sampling vacuum pump to the Tedlar bag.
  - Open the valve on the Tedlar bag.
  - Turn on the vacuum pump.
  - Fill the Tedlar bag approximately half full.
  - Close the valve on the Tedlar bag.
  - Turn off the vacuum pump.
  - Prepare a sample label including the project name, sample ID, analysis required, date and time of collection. Affix the sample label to the Tedlar bag.
  - Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.
- Discontinue the test at the scheduled time. The length of time scheduled for the test may vary from a couple of hours to a couple of days, depending on site conditions and the specific goals of the test. Long-term SVE pilot tests may be conducted for a time period of weeks or months.

10.4 Dual Phase Vacuum Extraction Pilot Testing

Objectives

- Conduct a dual phase vacuum extraction (DPVE) pilot test to determine the sustainable flow rates of soil vapors and groundwater from a well, the radius of vacuum influence and the radius of groundwater drawdown.

Equipment

- Mobile DPVE system or vacuum truck equipped with a DPVE blower
- Various piping, hoses and fittings as needed to create an airtight seal between the blower and the test well. Piping should include ports to monitor air flow and vacuum.
- Vacuum gauge (inches of mercury)
- Magnehelic gauges (inches of water)
- Wells caps with vacuum monitoring ports
- Air velocity meter
- PID meter
- Water level indicator

- Vacuum pump for air sampling
- Disposable tubing
- Groundwater sample containers
- Tedlar bags
- Sample labels

Procedure

- Don latex gloves.
- Measure and record baseline depth to water of the test well and all distal wells.
- For each of the distal wells, determine if the well screen is submerged. If it is, then vacuum / pressure readings are not applicable.
- For wells with exposed well screens, install a well cap having a vacuum monitoring port.
- Measure baseline vacuum / pressure of the test well and distal wells using the magnehelic gauges and record. It may be necessary to vent the cap before measure the vacuum / pressure because changes in the depth to water with in the well can create an artificial vacuum or pressure.
- Connect the DPVE system to the test well.
- Start the test by turning on the DPVE system. Record the time.
- Periodically, measure and record the following parameters:
  - Vacuum at the blower
  - Vacuum at the well head
  - Air flow rate (acfm) of the air extracted (also measure temperature and pressure/vacuum at this location to convert acfm to scfm)
  - Liquid flow rate of the groundwater extracted
  - PID reading of the air extracted
  - Depth to water in all distal wells
  - Vacuum / pressure in distal wells with exposed well screens
- Samples of the influent air may be collected for laboratory analysis.
  - Don a new pair of latex gloves for each sample.
  - Use tubing to attach the influent of the air sampling vacuum pump to a port before the blower.
  - Use tubing to attach the effluent of the air sampling vacuum pump to the Tedlar bag.
  - Open the valve on the Tedlar bag.
  - Turn on the vacuum pump.
  - Fill the Tedlar bag approximately half full.
  - Close the valve on the Tedlar bag.
  - Turn off the vacuum pump.
  - Prepare a sample label including the project name, sample ID, analysis required, date and time of collection. Affix the sample label to the Tedlar bag.
  - Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.
- Samples of the influent groundwater may be collected for laboratory analysis.
  - Don a new pair of latex gloves for each sample.
  - Collect a sample of the groundwater from the effluent of the pump, prior to carbon treatment.
  - Fill VOA sample containers completely, leaving no head space in the containers.
  - Prepare a sample label including the project name, sample ID, analysis required, date and time of collection. Affix the sample label to the sample containers.

  - Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.
- Discontinue the test at the scheduled time. The length of time scheduled for the test may vary from a couple of hours to a couple of days, depending on site conditions and the specific goals of the test. Long-term DPVE pilot tests may be conducted for a time period of weeks or months.

11.0 COLLECTION OF SEPARATE PHASE LIQUID

11.1 Passive Collection of Separate Phase Liquid

Objective

- Collect separate phase liquid (SPL) from the subsurface for disposal off site.

Equipment

- Dinky socks
- Absorbent pads
- Interface probe
- Buckets
- Toolbox
- Rope
- Field notebook
- Site map
- Nitrile gloves

Procedure

- Record date, time of arrival, personnel, and goal(s) in field notebook.
- Don nitrile gloves.
- Place absorbent pads on the ground around the well to protect from surface spills.
- Open wells.
- Remove well cap (should have a rope attached to it, tied to the absorbent).
- Remove absorbents (Dinky Socks). Place absorbents in bucket.
- Using the interface probe, find the Depth to Product (DTP), and the Depth to Water (DTW). Interface probes must be turned on by a white button on the side. The DTP is a solid tone, and the DTW is a beeping tone.
- Record DTP and DTW in the field notebook.
- Note the amount of SPL in the absorbent. Use odor and color (dark petroleum staining) as indicators.
- If absorbent is more than half full, replace it. Store spent absorbent in a bucket temporarily.
- Record in the field notebook what size absorbent, how full it is, and if it was changed.
- Return absorbents to well (Dinky socks will float, just tie a rope to them and to the well cap and drop them in the well)
- Replace well cap.
- Replace flush mount lid and bolt it down.
- Spent absorbents should be placed in 55 gallon metal drums or plastic buckets with sealable lids labeled “hazardous waste – spent absorbents.” (15/16” socket and crescent wrench to open drums).

- DO NOT REMOVE OR TRANSPORT ABSORBENTS FROM SITE.
- Absorbent drums and buckets should be located in sheds, trailers or next to the buildings.
- Record how full the absorbent drum/bucket is (approximately) and how many empty drums (metal and plastic) are on site in the field notebook.
- Record time of departure in field notebook.
- Upon return to the office, fill out equipment logs and time sheets. Enter field data into electronic databases.

11.2 Vacuum Extraction

Objective
- Collect separate phase liquid and contaminated groundwater from the subsurface for disposal off site.

Equipment
- Vacuum truck
- Water level indicator
- Field notebook

Procedure
- Open well(s) to be vacuumed.
- Record initial depths to water and depths to product.
- Insert drop tube into well and attach it to the well head.
- Record Start and Stop times for extraction on all wells.
- Begin vacuum extraction.
- Record drop tube length, vacuum at the well head, vacuum at the air water separator, influent air flow and temperature, PID readings and liquid flow rate, if available.
- Record total volume removed from wells.
- Record volume of product removed from wells.
- Complete a manifest (see section 12.3).

12.0 WASTE MANAGEMENT

The disposition of wastes is regulated by the Pennsylvania Department of Environmental Protection (DEP). Wastes are generated during activities including drilling, well development, groundwater sampling and free product collection. A waste manifest is the means by which the disposition of wastes is tracked from the generator to the disposer. The process of waste disposal includes sampling of the waste, profiling, manifest preparation, transportation and disposal.

12.1 Waste Sampling

Objective
- Obtain analytical data that is representative of the waste to be disposed.

Equipment
- Sample containers
- Sampling equipment

Procedure

- For soil cuttings, collect a sample from each container and composite the material. Sample the composite material for the parameters of interest.
- For spent carbon, collect a sample from the first carbon canister in line; it will have the highest contaminant concentrations.
- For staged groundwater, collect a grab sample.
- Fill the laboratory sample containers using standard protocols.
- Prepare a chain-of-custody form and ship samples in accordance with Section 7.0.

12.2 Waste Profiling

Objective

- Accurately characterize the waste for disposal in accordance with DEP waste regulations.

Materials / Information

- Analytical data for the waste
- Site information
- Generator information
- Description of the waste

Procedure

- Contact the disposing facility and obtain the required form(s).
- Collect the information needed to complete the form:
    - Generator Name, address, telephone number and responsible party
    - Site name and location
    - Results of analytical testing
    - Copy of the laboratory report
    - Type of waste
    - Volume or weight of waste
    - Number of containers to be disposed
    - Physical characteristics of waste
    - Letter of authorization to sign on behalf of the generator
    - Temporary EPA Identification Number
    - Obtain authorized signature on the form
- Mail or fax the completed form to the disposing facility.
- A profile number will be assigned by the disposer upon approval.
- Note: An EPA Generator ID number may be required by some disposal facilities for disposal of hazardous, non-hazardous or exempt media. In Pennsylvania, the DEP provides a temporary number upon request.

12.3 Manifesting, Transporting and Disposing of Waste

Objective

- Complete a legal record of the waste from generation to final disposition.

Materials Needed

- Waste manifest provided by the disposing facility

Procedure

- Assemble the required information and provide the following:
  - Generator name, address and telephone number
  - Site location
  - Description of waste
- At the time the waste is transported, add additional information to the form:
  - Name and signature of generator's authorized agent
  - Date of shipment
  - Transporter name and address
  - Driver's name, signature, vehicle license number and truck number
- Manifests are three or four-part forms. Remove one copy for IGI records.
- Send the original and remaining copies with the transporter for delivery to the disposing facility.
- Upon receipt of the delivery, the disposing facility will complete the form and return the original to IGI. This is a legal record of waste generation and disposal.

ATTACHMENT L

HEALTH & SAFETY PLAN

Graft Oil Company
Arch Street Honey Bear Mini-Mart
200 McKean Street
Kittanning, PA 16201

Prepared by:

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611 South Irvine Avenue
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HEALTH AND SAFETY PLAN
SITE INVESTIGATION AND REMEDIATION
Graft Oil Company
Arch Street Honey Bear Mini-Mart
200 McKean Street
Kittanning, PA

1.0 INTRODUCTION

The Site Health and Safety Plan (HASP) establishes the safety requirements and procedures governing work performed by Insite Group, Inc. personnel, contractor personnel, and site visitors during site investigation and remediation activities performed at the Arch Street site, Kittanning, PA 16201.
This HASP defines general applicability and general responsibilities with respect to compliance with Insite Group, Inc Health and Safety Programs.

1.1 Scope and Applicability of the Site Health and Safety Plan

The purpose of this Site Health and Safety Plan (HASP) is to define the requirements and designate protocols to be followed at the Arch Street facility during site investigation and remediation activities. Applicability extends to all Insite Group, Inc. personnel, contractors, sub-contractors, regulatory personnel, and visitors.

All personnel on site, contractors and sub-contractors included, shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This HASP summarizes those hazards and defines protective measures planned for this site in section 10.

During development of this plan consideration was given to current safety standards as defined by Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH), Environmental Protection Agency (EPA), and American Conference for Governmental Industrial Hygienists (ACGIH) health effects and standards for known contaminants, and procedures designed to account for the potential of exposure to unknown substances.

1.2 Visitors

The site currently operates as a gasoline retail facility and convenience store. The routine operation of the site requires no compliance with the HASP. Site visitors who perform work at the site will be required to comply with the applicable provisions of this HASP. Subcontractors will be expected to provide their own personal protective equipment (PPE), if deemed necessary. In the event that a visitor does not adhere to the provisions of the HASP, he/she will be requested to leave the work area. All nonconformance incidents will be recorded in the site log.

2.0 KEY PERSONNEL

The following sections present a summary of the key personnel responsible for completing site investigation and remediation activities at the Arch Street facility in Kittanning, Pennsylvania according to the site specific HASP.

2.1 Specific Health and Safety Personnel

The Site Health and Safety Officer (HSO) has responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, it is vital that personnel assigned as HSO be experienced and meet the additional training requirements specified by OSHA in 29 Code of Federal Regulations (CFR) 1910.120 (see section 4). The HSO is also responsible for conducting site inspections on a regular basis in order to ensure the effectiveness of this plan.

2.2 Organizational Responsibility

The following personnel and organizations are critical to the planned activities at the site. The organizational structure will be reviewed and updated periodically by the project manager.

- Project Director – Responsible for the overall completion of the project.
- Project Manager/Site Supervisor – Responsible for project oversight and completion. Reports to the project director.
- Site Health and Safety Officer – Responsible for the day-to-day implementation of the requirements of this HASP. Reports to the Project Manger. Duties may be assumed by the Project Manager.
- Site Workers and Sub-contractors – Responsible for the daily implementation of the work plan. Report to Project Manager.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

The evaluation of hazards is based upon the knowledge of site background and anticipated risks posed by the specific operation. The following sections describe each task/operation in terms of specific hazards associated with it. In addition, the personnel protective measures to be implemented during completion of those operations are also identified.

3.1 Site Narrative

Subsurface investigations conducted at the site revealed the presence of dissolved phase gasoline constituents in groundwater. The primary contaminant of concern is residual phase unleaded gasoline product, which extends off the Graft property. In addition, free product collects in an extraction well and in an injection well on site. Free product is passively collected in absorbent booms that are replaced periodically. Product is stored in labeled containers at the site.

A groundwater extraction and treatment system was implemented in October 2004. Groundwater is extracted and conveyed to a treatment trailer, where it is treated and discharge to the sanitary sewer.

- Location

The site is a Honey Bear Mini-Mart located at 200 McKean Street, Kittanning, PA 16201.

- Description

The facility is a retail gasoline dispensing facility located in proximity to a Honey Bear Mini-Mart convenience store.

- History

A release of un-leaded gasoline was reported April 19, 2002 following receipt of analytical data associated with UST removal. Contaminated soil was observed beneath the piping under the dispenser island.

3.2 Site Activities

In general, site activities will include drilling activities, groundwater sampling, free product recovery and storage of spent absorbent booms.

3.3 Task Hazard Descriptions

The following sections outline the potential hazards associated with specific tasks that will be performed at the Arch Street site.

3.3.1 Drilling/Soil Sampling/Monitoring Well Installation

Physical and chemical hazards associated with drilling soil borings, collecting soil samples, and installing monitoring wells are similar. These hazards include the following:

- Contact with contaminated soil/groundwater.
- Personal injury due to slipping, tripping, or falling.
- Injury due to being hit by heavy machinery such as a drilling rig.
- Personal Injury due to being caught in the augers or other heavy machinery.
- The presence of underground and/or above ground utilities in the area of the soil borings, which could present electrical, pneumatic, chemical, or physical hazards depending on the utility.
- Collection of soil samples via direct-push methodology requires cutting open plastic soil sleeves in order to remove the sample. The plastic sleeves are very hard and the potential exists for the sampling personnel to be cut with the knife used to open the sleeves.

3.3.2 Purging of Monitoring Wells/Groundwater Sampling

Physical and chemical hazards associated with groundwater sampling include the following:

- Contact with contaminated water/petroleum product
- Electrical Hazards associated with pumps and water
- Personal injury due to slipping, tripping, or falling while sampling
- Hazards associated with traffic on McKean Street

3.3.3 Free Product Collection and Storage

Physical and chemical hazards associated with the collection of gasoline product include but are not limited to the following:

- Contact with petroleum product via inhalation or absorption
- Personal injury due to slipping, tripping, or falling

3.3.4 Soil Excavation and Backfilling

Physical and chemical hazards associated with soil excavation and backfilling may include but are not limited to the following:

- Slips, trips, and falls associated with walking on uneven surfaces or falling into excavated hole
- Hazards associated with splashing or spreading of possible contaminated groundwater in the excavation
- Danger of walking into the swing radius of the trackhoe bucket
- Danger of walking into the path of heavy machinery
- Hazards associated with traffic along McKean Street
- Fire, explosion, ignition hazards due to spark producing activities around free product
- Possibility of loading/excavation equipment striking overhead or underground utilities
- Fire, explosion, ignition hazards due to sparks or ignition sources in the area of refueling operations
- Exposure due to gasoline fumes laying in the excavation due to inversion

3.3.5 Piping System Installation

Physical and chemical hazards associated with this project include but are not limited to the following:

- Cuts, lacerations, and abrasions from sharps used to cut pipes
- Eye injury due to small airborne particles from cutting pipes
- Inhalation of gasoline fumes due to inversion while in the excavation

3.3.6 Loading and Unloading Excavated Materials

Physical and chemical hazards associated with this project include but are not limited to the following:

- Head injury to personnel standing around trucks being loaded associated with falling objects or trackhoe bucket
- Danger of being struck by heavy equipment moving around
- Skin contact with contaminated water

3.3.7 Resurfacing

Physical and chemical hazards associated with this project include but are not limited to the following:

- Cuts, lacerations, etc. due to bodily contact with machinery

Exposure to chemicals in re-surfacing materials

3.3.8 Dual Phase Extraction

Physical and chemical hazards associated with dual phase extraction may include but are not limited to the following:

- Hazards associated with movement of the trailer – Trailer wheels will be blocked and an exclusion zone delineated around the tanks and trailer.
- Hazards associated with splashing or spreading of possible contaminated groundwater
- Electrical hazards - Electrical wiring will be performed by a Chemviron representative. The circuit panel will be closed at all times to avoid sparking.

- Hazards associated with negative pressure – Openings and pressurized lines will be marked.
- Hazards associated with traffic along Route 711 – Traffic vests will be worn and cones will be used to route traffic. Wells in streets will only be sampled during daylight hours.

3.3.9 Extraction Well Screen Cleaning

Occasionally the extraction well screen becomes clogged with mineral precipitates- mainly iron. An acid solution, "Aqua Clear" MGA, is used for cleaning it. The solution is mixed from a powder. Soda ash is used to neutralize the acidity of the waste water that is pumped from the well in the cleaning process. Hazards associated with cleaning the extraction well screen may include but are not limited to the following:

- Hazards associated with air borne powder used in making the cleaning solution coming in contact with skin or eyes.
- Hazards associated with splashing liquid acid solution on skin or into eyes.
- Hazards associated with air borne soda-ash powder used in neutralizing the cleaning solution coming in contact with skin or eyes.

3.4 Chemical Hazards

The following section outlines the potential chemical hazards that may be encountered during work at the Arch Street site. Descriptions are based on contact with gasoline. The primary dangers are inhalation or absorption of gasoline constituents through contact with product while performing routine activities at the site.

3.4.1 General Descriptions

The primary constituents of concern in gasoline are Benzene, Toluene, Ethylbenzene, Xylene, Cumene (Isolpropylbenzene), and Naphthalene. All of these chemicals are classified as volatile organic compounds and produce similar symptoms from exposure. The chart shown below lists additional information about these chemicals. In addition, a Material Safety Data Sheet for each of these chemicals is provided in Appendix E.

Chemical Name & Formula	Personal Protection	Symptoms	First Aid
Benzene C_6H_6	Prevent skin contact Prevent eye contact	Irritation eyes, skin, nose, respiratory system; giddiness; headache, nausea, staggered gait; fatigue, anorexia, lassitude; dermatitis; bone marrow depression; [potential occupational carcinogen]	Eye: immediately wash with large amounts of water* Skin: Soap wash immediately* Breath: respiratory support* Swallow: medical attention immediately (* seek medical attention immediately)
Ethyl benzene $CH_3CH_2C_6H_5$	Prevent skin contact Prevent eye contact	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: immediately wash with large amounts of water* Skin: water flush promptly Breath: respiratory support* Swallow: medical attention immediately (* seek medical attention immediately)
Cumene $C_6H_5CH(CH_3)_2$	Prevent skin contact Prevent eye contact	Irritation eyes, skin mucous membrane; dermatitis; headache, narcosis, coma	Eye: immediately wash with large amounts of water* Skin: water flush promptly Breath: respiratory support* Swallow: medical attention immediately (* seek medical attention immediately)

Chemical Name & Formula	Personal Protection	Symptoms	First Aid
Naphthalene $C_{10}H_8$	Prevent skin contact Prevent eye contact	Irritation eyes; headache, confusion, excitement, malaise; nausea, vomiting, abdominal pain; irritation bladder; profuse sweat; jaundice; hematuria, hemoglobinuria, renal shutdown; dermatitis; optical neuritis, corneal damage	Eye: immediately wash with large amounts of water* Skin: molten - flush immediately* sol-liq - soap wash promptly Breath: respiratory support* Swallow: medical attention immediately (* seek medical attention immediately)
Toluene $C_6H_5CH_3$	Prevent skin contact Prevent eye contact	Irritation eyes, nose; fatigue, weak, confusion, euphoria, dizziness, headache; dilated pupils, lacrimation; nervousness, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage	Eye: immediately wash with large amounts of water* Skin: Soap wash immediately* Breath: respiratory support* Swallow: medical attention immediately (* seek medical attention immediately)
Xylenes $C_6H_4(CH_3)_2$	Prevent skin contact Prevent eye contact	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait, corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis	Eye: immediately wash with large amounts of water* Skin: Soap wash immediately* Breath: respiratory support* Swallow: medical attention immediately (* seek medical attention immediately)

4.0 PERSONNEL TRAINING REQUIREMENTS

All site personnel are required to be trained in accordance with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response.

4.1 Pre-assignment and Annual Refresher Training

Prior to (arrival on site, beginning work, etc.) each employer will be responsible for certifying that his/her employees meet the requirements of pre-assignment training. Consistent with (ex. OSHA 29 CFR 1910.120 paragraph (e)(3)). Each employee should be able to provide a document certifying dates of 24 to 40 hours of training depending on the employee and his/her purpose on the site.

4.2 Site Supervisors Training

Ex. Consistent with OSHA 29 CFR 1910.120 paragraph (e)(8), individuals designated as site supervisors require an additional 8 hours of training. The following individuals are identified as site supervisors:

Sara Giordano	Project Director
Paul Rogers	Project Manager/SHSO

4.3 Training and Briefing Topics

The following items will be discussed at the site pre-entry briefing(s), as well as daily or periodic site briefings:

Training	Frequency
Physical hazards	Daily/Periodically, dependent on acitvity
Chemical hazards	Annually

Training requirements Sec. 4.0; [29 CFR 1910.120 (e)] etc.	Annually
Heavy machinery	Daily/Periodically dependent on activity
Engineering controls and work Practices	Periodically
PPE, Etc.	As required for tasks not performed routinely.

5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

This section describes the general requirements of (EPA, OSHA, Etc.) designated levels of protection (A-D), and specific levels of protection for each task require at the site.

5.1 Levels of Protection

Personnel wear protective equipment when response activities involve known or suspected atmospheric (or other hazard) contamination: when vapors, gases, or particulates may be generated by site activities: or when direct contact with skin-affecting substances may occur. Full face-piece respirators protect lungs, gastrointestinal tract, and eyes against airborne toxics. Chemical-resistant clothing protects the skin from contact with skin—destructive and absorbable chemicals.

The specific levels of protection and necessary components for each level have been divided into four categories according to the degrees of protection afforded:

Level A: Should be worn when the highest level of respiratory, skin, and eye protection is needed.

Level B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection. Level B is the primary level of choice when encountering unknown environments.

Level C: Should be worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is needed.

Level D: Should be worn only as a work uniform and not in an area with respiratory or skin hazards. It provides minimal protection against chemical hazards.

Modifications of these levels are permitted, and are routinely employed during work activities to maximize efficiency. For example, Level C respiratory protection may be required for a given task. Likewise, the type of chemical protective ensemble (i.e., material, format) will depend upon contaminants and degrees of contact. The level of protection is selected based upon the following:

- Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity.

- Potential for exposure to substance in air, splashes of liquids, or other direct contact with material due to work being done.
- Knowledge of on-site chemicals along with properties such as toxicity, route of exposure, and contaminant matrix.

In situations where the type of chemical, concentration, and possibilities of contact are not known, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be better identified.

5.2 Personal Protective Level

The level of PPE selected for soil/groundwater sampling, drilling, monitoring well installation/abandonment, and operation and maintenance activities (except for oil/water separator and surge tank cleanout) at the site is Level D PPE. Personnel while working on site, at a minimum, should wear the following PPE:

- Work clothes
- Work gloves
- Gloves (when sampling), chemical resistant
- Eye protection
- Boots, steel toe – for drilling and construction activities
- Hard hat – for drilling and construction activities

During activities where exposure to sludge/sediments and splash hazards exist, a tyvek or saranex suit should be worn in addition to the above-listed PPE.

A PPE inspection checklist is provided as Table 1.

5.3 Reassessment of Protection Program

The level of protection provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or findings of investigations. When a significant change occurs, the hazards should be reassessed. Some indicators of the need for reassessment are:

- Commencement of a new work phase.
- Change in job tasks during a work phase
- When temperature extremes or individual medical considerations limit the effectiveness of PPE.
- Contaminants other than those previously identified are encountered.
- Change in ambient levels of contaminants.
- Change in work scope, which affects the degree of contact with contaminants.

5.4 Chemical Resistance and Protective Material Integrity

The following specific clothing materials are recommended/required for this site:

- Inner Gloves – Nitrile (disposable)
- Tyvek or Saranex suit during oil/water separator and surge tank cleanout.

5.5 Standard Operating Procedures for Respiratory Protection Devices

No ambient chemical levels requiring use of this equipment are expected at this site; however these sections are included in the unlikely event that they become present.

The following subsections define standard operating procedures for cleaning, storing, and inspecting air purifying respirators (APRs) and self-contained breathing apparatus (SCBA).

5.5.1 Cleaning and disinfecting Air Purifying Respirators

APRs in routine use should be cleaned and disinfected at least daily. Where respirators are used only occasionally, or when they are in storage, the cleaning interval is weekly or monthly, as appropriate.

5.5.1.1 Daily Cleaning Procedures

The steps to be followed for daily cleaning and disinfecting are as follows:

- Respirator Disassembly. Respirators are taken to a clean location where the filters, cartridges or canisters are removed. To prevent accidental re-use all damaged parts are discarded and replaced. For thorough cleaning, the inhalation and exhalation valves, speaking diaphragm, and any hoses are removed.
- Cleaning. In most instances, the cleaning and disinfecting solution provided by the manufacturer is used, and is dissolved in warm water in an appropriate tub. Using gloves, the respirator is placed in a clean basin and swirled for a few moments. A soft brush may be used to facilitate cleaning.
- Rinsing. The cleaned and disinfected respirators are rinsed thoroughly in water to remove all traces of detergent and disinfect. This is very important for preventing dermatitis.
- Drying. The respirators may be allowed to dry room air on a clean surface. They may also be hung upside down like drying clothes, but care must be taken not to damage or distort the face-piece.
- Re-assembly and Inspection. The clean, dry respirator face-pieces should be re-assembled and inspected in an area separate from the disassembly area to avoid contamination. Special emphasis should be given to inspecting the respirators for detergent or soap residue left by inadequate rinsing (appears most often under the seat of the exhalation valve, and can cause valve leakage or sticking).

5.5.1.2 After Routine Use in Exclusion Zone

The steps to be followed for cleaning and disinfecting in the field are as follows:

- The mask may be washed/rinsed with soap and water.
- At a minimum, the mask should be wiped with disinfectant wipes (Benzyl alkaloid or isopropyl alcohol) and allowed to air dry in a clean area.

5.5.2 APR Inspection and Checkout

The following procedure will be used to inspect and checkout APRs prior to their use:

1. Visually inspect the entire unit for any obvious damages, defects, or deteriorated rubber.

2. Make sure that the face-piece harness is not damaged. The serrated portion of the harness can fragment which will prevent proper face seal adjustment.
3. Inspect lens for damage and proper seal in face-piece.
4. Exhalation Valve – pull off plastic cover and check valve for debris or for tears in the neoprene valve (which could cause leakage).
5. Inhalation Valves (two) – screw off cartridges/canisters and visually inspect neoprene valves for tears. Make sure that the inhalation valves and cartridge receptacle gaskets are in place.
6. Make sure a protective cover lens is attached to the lens.
7. Make sure the speaking diaphragm retainer ring is hand tight.
8. Make sure that you have the correct cartridge.
9. Don the APR and perform a negative pressure test.

5.5.3 Storage of Air Purifying Respirators

OSHA requires that respirators be stored to protect against:

- Dust
- Sunlight
- Heat
- Extreme cold
- Excessive moisture
- Damaging chemicals
- Mechanical damage

Respirators should be stored in a clean, secure area, which minimizes the chance for contamination or unsanitary conditions.

5.6 Standard Operating Procedures for PPE

Proper inspection of PPE features several sequences of inspection depending upon specific articles of PPE and the frequency of use. The different levels of inspection are as follows:

- Inspection and operational testing of equipment received from the factory or distributor.
- Inspection of equipment as it is issued to workers.
- Inspection after use or training, and prior to maintenance.
- Periodic inspection of stored equipment.
- Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The primary inspection of PPE in use for activities at the site will occur prior to immediate use and will be conducted by the user. This procedure ensures that the specific device or article has been checked-out by the user, and that the user is familiar with its use.

6.0 MEDICAL SURVEILLANCE REQUIREMENTS

The Medical Surveillance Program is a regulatory requirement designed to ensure that the health of employees is monitored while working on hazardous waste sites. Since the Arch Street site is not a hazardous waste site, the Program does not apply.

While working at this site, employees may come into contact with groundwater that has been impacted by septic system discharges. Quarterly groundwater sampling and discharge monitoring are two tasks that provide potential exposure to septic system discharges. The health concern associated with exposure to septic system discharges is Hepatitis A. Therefore, all employees are encouraged to receive Hepatitis A vaccination at company expense. Hepatitis A vaccination consists of 2 injections. Tetanus shots are provided every 7 years or upon injury.

If while working at this site, an employee develops symptoms of acute exposure to petroleum fumes, he/she must report the incident to a supervisor. The employee will be referred to a medical facility or practitioner for immediate attention.

The potential for exposure to petroleum constituents will be reevaluated on a task-by-task basis in pregnant females. Changes in work assignments may occur as a result.

If hazardous waste work should become an activity at the site, the following employees will be included in the Medical Surveillance Program:

- All employees who are exposed to hazardous substances or health hazards above published exposure limits (e.g., OSHA PELs, ACGIH TLVs, NIOSH RELs) without regard to the use of respirators, for 30 days or more a year;
- All employees who wear a respirator for 30 days (or fractions of days) or more a year or as required by 29 CFR 1910.134
- All employees who are injured, become ill, or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; and

6.1 Baseline Monitoring

Medical surveillance specifies any special medical monitoring and examination requirements for hazardous waste work required by 29 CFR 1910.120. As a minimum, the examination will include:

- Complete medical and work histories
- Urinalysis
- Physical Exam
- Vision and Hearing Exam
- Blood Chemistry
- Pulmonary Function Test
- Audiometric

The examination will be conducted annually if the exposure is continuous. Additional medical testing may be required by the OHSM in consultation with the company physician and the SHSO if an overt exposure or accident occurs, or if other site conditions warrant further medical surveillance.

7.0 ENVIRONMENTAL MONITORING

Environmental monitoring will be conducted to determine type of personal protection equipment that must be used during site operations. Monitoring will also be performed to determine whether or not airborne contaminants are migrating off site.

7.1 Organic Vapor Measurements

If warranted, organic vapor will be measured using a PID or similar instrument. Organic vapor readings will be taken at the site before each day's work begins and at previously described intervals throughout the day. The specific frequency of the readings will be determined by the Site Health and Safety Officer (SHSO) based on measured levels. The higher the levels of organic vapor detected, the more frequent the measurements will take place. If organic vapor levels are approaching an action level concentration, such as 50 parts per million, monitoring will be continuous.

There will be periodic measurements of organic vapor taken at the perimeter of the job site. This should be done on a regular basis at a minimum of four times a day. If organic vapors in excess of 500 Parts per million are encountered in the work area ambient air (i.e., working on smaller areas, ventilation, etc.) to limit off-site emissions. The actual frequency of OVM measurements and vapor reduction measures will be determined by the SHSO based on (his/her) observation at the time.

7.2 Carbon Monoxide Monitoring

If warranted, carbon monoxide levels will be determined in the general work area several times a day if equipment or structures restrict airflow. The work site is not a confined space, but air movement through the site can be restricted, and the constant use of gasoline-powered equipment may result in unacceptable levels of carbon monoxide developing in the area. The actual frequency of carbon monoxide measurements will be determined by the Site Health and Safety Officer based on previous measurements and the work activities being performed.

7.3 Flammable Atmosphere Monitoring

If warranted, flammability will also be measured at any location showing a PID reading in excess of 1,000 parts per million total organic vapor.

7.4 Modifications to Environmental Monitoring Plan

The frequency of monitoring, the substances measured, and the types of instruments used are all subject to modification. Based on information developed as the project progresses, any responsible member of the project staff (e.g., the SHSO or SPM) may alter the monitoring requirements for this job.

The SHSO has the authority to increase the frequency of monitoring should the site conditions indicate. Decreasing the type or frequency of monitoring established in this plan will require the concurrence of the Site Manager. Any substantial modifications to this plan should be in writing.

8.0 SITE CONTROL MEASURES

The following section defines measures and procedures for maintaining site control. Site control is an essential component in the implementation of the site health and safety program.

8.1 Buddy System

During all Level B or C activities or when site conditions present a risk to personnel, the implementation of a buddy system is mandatory. A buddy system requires at least two people who work as a team, each looking out for the other. For example, Level B operations generally require three people working as buddies (or as company policy mandates). The buddy system will also be required during surface water sampling if sampling personnel must enter the area.

8.2 Site Communications Plan

Successful communications between field teams and contact with personnel in the support zone is essential. The following communications systems will be available during activities at the site:

- Whistle
- Hand Signals

Signal	Definition
Hands clutching throat	Cannot breathe
Hands on top of head	Need assistance
Thumbs up	OK/I am alright/I understand
Thumbs down	No/negative

Note: Additional hand signals may be added as necessary and at digression of IGI site supervisory personnel and will be reviewed with all site personnel to ensure understanding.

8.3 Nearest Medical Assistance

Appendix B provides directions to the nearest medical facility, which can provide emergency care for individuals who may experience an injury or exposure on site. The route to the hospital should be verified SHSO, and should be familiar to all site personnel.

8.4 Emergency Alarm Procedures

The warning signals described in Section 10.5 (or as applicable) [Evacuation Routes and Procedures] will be deployed in the event of an emergency. Communication signals will also be used according to Section 8.2.

9.0 DECONTAMINATION PLAN

Table 2 lists the tasks and specific levels of protection required for each task to be performed at the Arch Street site. Consistent with the levels of protection, these procedures should be modified to suit site conditions and protective ensembles in use.

9.1 Contamination Prevention

One of the most important aspects of decontamination is contamination prevention. Contamination prevention practices will minimize worker exposure and ensure valid sample results by precluding cross contamination. Procedures for contamination prevention include the following:

- Do not walk through areas of obvious or known contamination;
- Do not handle or touch contaminated materials directly;
- Make sure all personal protective equipment (PPE) has no cuts or tears prior to donning;
- Fasten all closures on suits, covering with tape, if necessary;
- Take particular care to protect any skin injuries;
- Stay upwind of airborne contaminants; and
- Do not carry cigarettes, gum, etc. into contaminated areas.

9.2 Standard Operating Procedures

Decontamination involves the orderly and controlled removal of contaminants. All site personnel should minimize contact with contaminants to minimize the need for extensive decontamination.

9.3 Levels of Decontamination Protection Required for Personnel

The levels of protection required for personnel assisting with decontamination will be equal to that used by the site personnel during the given task. The SHSO is responsible for monitoring decontamination procedures and determining their effectiveness.

9.4 Equipment Decontamination

The following procedure will be utilized during decontamination of sampling equipment at the site: (as is applicable)

- Alcanox or Dawn Detergent in tap water scrub
- Tap water rinse
- Distilled/de-ionized water rinse
- Air dry

Equipment not used immediately following decontamination will be wrapped in aluminum foil to help prevent the introduction of foreign materials/contaminants. A decontamination solvent (i.e., acetone, hexane, methanol, etc.) may be used as appropriate in the decontamination process. Solvents used will be pesticide grade or higher.

9.5 Disposition of Decontamination Wastes

Equipment and solvents used for decontamination shall be decontaminated or disposed of properly. Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment shall be informed of the potentially harmful effects of exposures. All decontamination fluids and spent PE must be drummed and staged pending appropriate disposal. Each type of material must be stored in a separate drum.

10.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

This section describes contingencies and emergency planning procedures to be implemented at the Arch Street site. This plan is compatible with local, state, and federal disaster and emergency management plans, as appropriate.

10.1 Pre-Emergency Planning

During the site briefings held periodically, all employees will be trained in and reminded of provisions of the emergency response plan, communication systems, and evacuation routes. The plan will be reviewed, and revised, if necessary, on a regular basis by the HSO. This procedure will help ensure that the plan is adequate and consistent with prevailing site conditions.

10.2 Emergency Planning

Before project work commences, personnel who will be present at the site on a regular basis will review the Emergency/Off-Site Response Plan. Following this review, the subcontractor and Insite Group, Inc. project management will finalize detailed response strategies for various emergency conditions.

10.2.1 Sudden Illness

Any person at the site may become ill for no apparent reason. However, because hazardous chemicals are being worked with at the site, any sudden illness must be considered possibly due to overexposure to a toxic chemical. Anyone who becomes ill MUST be referred to a physician immediately. The SHSO will arrange for the victim to be immediately transported to a suitable medical facility. If in his judgment an ambulance is required, one shall be summoned at once.

10.2.2 Conventional Incident

Conventional incidents for purposes of this plan are incidents that do not involve exposure to hazardous chemicals. Examples of conventional incidents are falls, cuts, abrasions, traffic accidents, etc. The procedure for a conventional incident will involve the following:

- Evaluation of the situation. Is the injured person in danger where he/she is?
- Move the victim only if this is necessary to prevent further injury. If not, secure the immediate area.
- Determine the extent of the injury. Render appropriate first aid.

10.2.3 Exposure to Toxic Concentrations of Chemicals

Four main exposure routes are available for toxic chemicals at a hazardous substance operation: inhalation, ingestion, absorption, and injection. As described in Chapter 3.0 (or as applicable), the only toxic chemicals known or believed to be present at the site are petroleum hydrocarbons. Section 3.4.1 describes the applicable first aid procedures for contact with these chemicals. All workers on the site should be trained to avoid any eating, drinking, smoking, or other hand to mouth activities during fieldwork. However, because of potentially fatal complications following the improper treatment for ingestion of organic compounds, this exposure route is included in the first aid procedures.

10.2.4 Exposure to Oxygen Deficiency

Exposure to an oxygen deficient environment is not anticipated at this site; however, the following information is provided in the event that it occurs.

Oxygen deficient atmospheres are immediately dangerous to life and health (IDLH). If a worker has been exposed to an oxygen-deficient atmosphere, a medical evaluation should be obtained even if there is no overt sign of damage or impairment.

In the event that a worker is in an atmosphere found to be oxygen deficient, he/she should be promptly evacuated to fresh air. If he/she is unconscious or loses consciousness, carefully evaluate his/her breathing and be prepared to support respiration. Administer oxygen (if applicable) and summon emergency medical attention.

If someone must be rescued from an oxygen-deficient atmosphere, it is imperative that the rescuer be protected from the dangerous atmosphere. Rescue in an IDLH atmosphere must be conducted using the appropriate type of personal protection equipment. Use of self-contained breathing apparatus in this circumstance is mandatory

10.2.5 Heat Stress

Heat stress may develop as a result of performing physically demanding tasks in warm weather. Use of chemically resistant clothing can intensify heat stress. Heat-related illness may range from cramps to heat stroke.

If heat cramps develop, the affected worker should rest in a cool location and gradually re-hydrate by drinking water or an electrolyte replacement (i.e., Gatorade, etc.). After the cramps subside, the employee can return to work but should avoid heavy labor for the rest of the day.

Heat exhaustion is a more serious condition. A victim of heat exhaustion should rest and re-hydrate. He/she should be attended by persons knowledgeable in first-aid for heat stress. After the worker recovers from heat exhaustion, he/she should not report back for work that day. A medical evaluation may be advisable. Heat stroke is a life-threatening emergency. The victim should be aggressively cooled with available water, ice packs, etc. Emergency medical attention should be summoned immediately.

If project operations must be conducted during particularly hot weather or in hot conditions, supervisory personnel need to be aware of the symptoms of heat illness. Workers should be frequently evaluated for the signs of developing heat stress. Work schedules should be adjusted to minimize the likelihood of workers developing heat-related illness (i.e., by taking frequent rest breaks, job rotations, or scheduling heavy labor during the early part of the day).

10.2.6 Frostbite

If project operations must be conducted in extremely cold weather, frostbite can also resent a hazard. When work is to be performed at temperatures below freezing, all workers should be suitably dressed. Supervisory personnel should be alert for the signs of a developing frostbite and should direct workers to report to a warmer area if incipient frostbite is observed.

A more typical but far more dangerous condition that can develop in cold weather is hypothermia. This can result in impaired physical performance and judgment, leading to incidents. Anyone found to be suffering from hypothermia should be taken to a warm area at once. Hot beverages will speed recovery from hypothermia. The victim should be thoroughly warm before returning to work.

10.2.7 Fire and Explosion

The presence of free product presents a significant fire hazard. Natural gas lines or product lines potentially located in the area present an additional complication, both as a source of fire hazard in themselves and as a factor increasing the seriousness of any fire from other sources. Any fire on the site is a serious emergency. While every effort must be made to fight and contain a fire on the site, emergency assistance MUST be summoned immediately.

Fire control equipment must be present at the site at all times. At least one person on the site should be familiar with the operation of the fire extinguishers and the proper techniques for fighting burning liquid fires. All site personnel not immediately involved in fire fighting should be evacuated from the site until the fire is out.

Supervisory personnel must make a head count immediately. If any site personnel are unaccounted for, designated rescue team members should be deployed in appropriate protective equipment to locate and rescue any missing employees. Site personnel will defer to the direction of trained emergency personnel, if available.
Procedures for summoning emergency assistance must be established in advance of beginning the excavation work. The locations of telephones must be established together with the provisions for gaining access to them. Telephone numbers for emergency services must be clearly posted at the job site.

An explosion may occur at the site from ignition of an accumulation of flammable vapors. The procedures to follow in the event of an explosion are similar to those for fire.

Fire and explosion prevention should be a primary concern for all site operations. Good Housekeeping practices should be employed. “No Smoking” policies in or around the work area should be strictly enforced. Other sources of ignition should be eliminated to the extent possible. Work that can produce sparks should only be performed in atmospheres that have been thoroughly monitored for flammability. Ventilation of the work area may be necessary to prevent accumulation of flammable vapors.

10.2.8 Natural Gas Line Rupture

In the event that a natural gas line rupture occurs, immediate cessation of all site activities will be required. The site must be evacuated and emergency services (i.e., police, fire department, and gas company) immediately notified.

10.2.9 Chemical Release (Spills or Leaks)

Free product may accumulate during the course of project activities. Recovered product will be stored in properly marked tanks or drums pending disposal. While the material is stored on site, there is a possibility for release.

All facilities and devices for storage or transfer of product will be inspected daily to limit the likelihood of a release. Inspections will include checks for physical integrity, functionality, position of valves, etc., as may be required.

In the event of a release, designated personnel will be deployed to contain the spill and clean up any spilled material. The source of the spill will be controlled, if possible.

During the response to the spill, all non-essential personnel will be evacuated until the spill is contained and cleaned up. If the spill results in a reportable quantity of material being released, government agencies will be notified as required.

In the event of a spill or a leak, site personnel will:

- Inform their supervisor immediately.
- Locate the source of the spillage and stop the flow if it can be done safely.
- Begin containment and recovery of the spilled materials.

10.2.10 Exposure to Electricity

The potential exists for contact with underground or overhead electric lines during drilling. To avoid electrical shock, heavy equipment used during site activities should be operated at least 15 feet away from identified electric lines. In the event that site personnel contact an electric line, immediate medical attention is required. If the person remains in contact with a line or electrified piece of equipment, DO NOT attempt to detach that person from the contact point. Doing so would result in a transfer of the electricity through the victims' body into the rescuers body, injuring the rescuer. Contact the electric company to turn power off to the line and also emergency medical personnel. If the contacted electric line generates sparks and free product or significant product vapors exist in the vicinity, the potential for a fire or explosion exists. Sections 10.2.7 addresses these hazards.

10.3 Personnel Roles and Lines of Authority

The Site Supervisor has primary responsibility for responding to and correcting emergency situations, including taking appropriate measure to ensure the safety of site personnel and the public. Possible actions may involve evacuation of personnel from the site area and evacuation of adjacent residents. He/she is additionally responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. The SHSO may be called upon to act on the behalf of the site supervisor, and will direct responses to any medical emergency. The individual contractor organizations are responsible for assisting the project manager in his/her mission within the parameters of their scope of work.

10.4 Emergency Recognition/Prevention

Chapter 3.0 provides a listing of chemical and physical hazards associated with completing the assigned scope of work at the Arch Street site. Personnel will be familiar with techniques of hazard recognition from pre-assignment training and site-specific briefings. The SHSO is responsible for ensuring that prevention devices or equipment is available to site personnel.

10.5 Evacuation Routes/Procedures

In the event of an emergency which necessitates an evacuation of the site, personnel on site will:

- Blow on a whistle or activate an air horn

Site personnel will be expected to proceed to the closest exit with their buddy, and mobilize to the safe distance area associated with the evacuation route. Site personnel will remain at the area until the re-entry alarm is sounded or an authorized individual provides further instructions.

10.6 Emergency Contact/Notification System

All emergency contact information can be found in Appendix A.

10.7 Emergency Medical Treatment Procedures

First aid and other medical treatment should only be administered by trained and qualified personnel. As such, emergency notifications shall be made to the local emergency agencies to summon qualified personnel.

Any person who becomes ill or injured in the exclusion zone must be decontaminated, if necessary, to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket). First aid should be administered while awaiting an ambulance or paramedics. All injuries and illness must immediately be reported to the project manager.

Any person being transported to a clinic or hospital for treatment should take with them information on the chemical(s) they potentially have been exposed to at the site. This information is included in Chapter 3.0. Any vehicle used to transport contaminated personnel will be treated and cleaned as necessary following use.

10.8 Emergency Equipment

Insite Group, Inc. personnel shall carry mobile telephones and a Field Safety Kit to the site. The kit contains the items listed below. Each kit should be checked periodically for outdates on materials and restocked after each use.

- FIRST AID KIT
- FIRE EXTINGUISHER
- UMBRELLA
- SAFETY GLASSES
- EAR PLUGS
- WHISTLE
- X-LARGE NITRILE GLOVES
- MEDIUM NITRILE GLOVES
- PLASTIC CUPS
- LARGE ZIP-LOCK BAGS
- SMALL ZIP-LOCK BAGS
- PAPER TOWELS
- ABSORBENT PAD
- ABSOBENT SOCK
- ASPRIN CONTAINER
- Q-TIPS
- ACE BANDAGE
- EYE WASH KIT
- HAND SANITIZER
- PETROLEUM JELLY
- FIRST AID OINTMENT
- TRIPLE ANTIBIOTIC OINTMENT
- ROLAIDS
- SMALL BAR OF DOVE SOAP
- BOTTLES OF DRINKING WATER

11.0 SPILL CONTAINMENT PROGRAM

The procedures defined below comprise the spill containment program in place for activities at the Arch Street site:

- All drums and tanks used during the cleanup shall meet the appropriate DOT, OSHA, and EPA regulations for the waste that they will contain.
- Drums and tanks shall be inspected and their integrity confirmed prior to being moved. Drums or tanks that cannot be inspected before being moved because of storage conditions shall be positioned in an accessible location and inspected prior to further handling.
- Operations on site will be organized so as to minimize the amount of drum or tank movement.
- Employees involved in the drum or tank operations shall be warned of the hazards associated with the containers.
- Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment (i.e., absorbent, pillows, etc.) will be stationed in the immediate area. The available spill containment materials must be sufficient to contain and isolate the entire volume of the substance being transferred.
- Drums or tanks that cannot be moved without failure shall be emptied into a suitable container.
- Fire extinguishing equipment meeting 29 CFR part 1910, Subpart 1 shall be on hand and ready for use to control fires.

12.0 CONFINED SPACE ENTRY PROGRAM

There are no confined spaces at this site. The following information is provided in the event that a need to address confined spaces should arise in the future.

Confined space is defined as any space, depression, or enclosure that has limited opening for entry and egress, may have limited ventilation, may contain or produce life-threatening atmospheres due to oxygen deficiency, the presence of toxic, flammable or corrosive contaminants, and which is not intended for continuous occupancy.

13.0 HAZARD COMMUNICATIONS

Personnel working at this site have the right to know about the chemical hazards associated with hazardous materials used and stored onsite. This information will be readily available to all site workers as required by OSHA's Hazard Communication Standard (29 CFR 1910.1200). This information will be communicated to personnel through the maintenance of a chemical inventory system, chemical labeling, material safety data sheets (MSDSs), hazard communication training, and a written hazard communication program.

Chemicals imported to the site will bear the original Department of Transportation (DOT) required labeling on the chemical's container. In addition, a new label will be affixed to the original containers, if necessary, and to a new container to which the chemical is dispensed providing the chemical name and specific hazard warnings (e.g., flammability, health, reactivity). Hazard warnings will follow either the National Fire Protection Association (NFPA) format or the Hazardous Material Information Systems (HMIS) format. Both systems are easy to use and rely on numerically ranking hazards on a 0 to 4 scale. Most chemicals used onsite, which are

subject to the Hazard Communication Standard, are related to sampling activities. These chemicals may include hexane, methanol, acetone and nitric acid.

14.0 CONTROL OF HAZARDOUS ENERGY (Lockout / Tagout)

No hazardous energy sources exist at this site. The following information is provided in the event that such sources may occur in the future.

Hazardous energy at the site will be controlled through the use of a lockout/tagout procedure developed in accordance with OSHA's lockout/tagout standard (29 CFR 1910.147). The purpose of lockout/tagout procedures is to minimize exposures to hazards from the unexpected energizing, startup or release of residual or stored energy from equipment, machinery or processes. Lockout/tagout procedures will be followed during the installation, servicing and maintenance of machines or equipment that involve hazardous energy sources. Hazardous energy sources include any electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy source that is capable of causing injury to personnel.

Lockout / tagout procedures require the placement of a lock and/or tag on an energy-isolating device (a device that physically prevents the transmission or release of energy such as manually operated electrical circuit breakers, disconnect switches, valves and selector switches). After the energy isolation device is placed in the "off" or "safe" position, the lockout/tagout is placed on the energy isolation device to secure it in the "off" or "safe" position. This ensures that the equipment, machinery or process is not capable of being operated while installation, servicing, or maintenance is taking place.

If it is determined that lockout/tagout procedures are required for any aspect of site work, the following generic lockout/tagout procedures will be implemented. Note: these procedures will be tailored to the specific application of a lockout/tagout if there is a need for it. Presently, there are no known situations that would require the application of lockout/tagout procedures at this site.

1. Affected personnel and authorized personnel will receive lockout/tagout orientation training to become familiar with procedures to control hazardous energy. Affected personnel is defined as personnel whose job requires that they operate or use equipment, machinery or process on which servicing or maintenance is being performed under lockout/tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed. Authorized personnel is defined as a qualified person that an employer has given authority and responsibility to perform a specific lockout and/or tagout assignment.

2. Before proceeding with the installation, maintenance or servicing of any equipment, machinery or process at the site for which lockout/tagout procedures apply, a survey will be made to locate and identify associated energy isolation devices.

3. Once the survey is complete, the authorized personnel will notify all affected personnel including the FTL and SHSO that a shutdown of the equipment or machine will occur.

4. Following notification, the equipment or machine, if operating, will be shut down by normal stopping procedure (i.e., depress stop button, open toggle switch, turn light switch off, etc.)

5. Once turned off, the energy-isolating device (i.e., circuit breaker, disconnect switch, valve, etc.) will be operated in such a manner that the machine or equipment will be isolated from the energy source (electrical, mechanical, hydraulic, pneumatic, chemical, thermal, etc.)

6. The energy-isolating device is then "locked out" by applying the lockout, padlock and tag to the device. In some cases, a chain must be used (in combination with a padlock) to sufficiently "lockout" a device (i.e., steam valve, hydraulic valve, etc.).

7. The authorized personnel indicating the personnel's name and the date and time of the lockout will fill out the tag.

8. Once the energy-isolating device has been locked out and tagged, all potentially hazardous sources or residual energy will be purged or dissipated (i.e., grounding, bleeding, venting, lowering, etc.)

9. After ensuring that no personnel are exposed, the authorized personnel will operate the normal operating controls to make certain the equipment will not restart. The operating controls must be returned to the "off" or "neutral" position after the test.

10. Use a voltmeter to make sure that work is not energized, if applicable.

11. Attach a "ground stick" of sufficient size to handle any possible fault current to all three phases of the source, if applicable.

12. Maintenance or servicing of the machine or equipment can now be performed.

13. When the maintenance and/or service is completed, the work area is to be inspected to ensure that all affected personnel are safely positioned and/or removed. In addition, remove all nonessential items from the equipment.

14. The authorized personnel who applied the lockout devices shall then remove the lockout, padlock, and tag from the energy-isolating device.

15. Each and every personnel involved with the service or maintenance of the locked out equipment will place their assigned padlock to each and every lockout device and/or chain in such manner that if every other padlock were removed, the personnel would still have a padlock assuring that each and every source of energy is still "locked out". No personnel may affix the personal lockout/tagout device of another personnel.

16. If work on a piece of equipment of machinery that is locked out carries over to the next shift, the authorized personnel may remove their lockout device, provided that the next authorized personnel applies their lockout device at the same time the previous authorized personnel removes their lock device.

15.0 RECORD KEEPING REQUIREMENTS

Record keeping requirements mandated by OSHA 29 CFR 1910.120 will be strictly followed. Specifically, all personnel training records, incident reports (Appendix E), and medical examination records will be maintained by Insite Group Inc. for a period of at least 30 years after the employment termination date of each employee. The SHSO will maintain a daily written log

of health and safety monitoring activities and monitoring results will become part of the project records.

16.0 HEARING CONSERVATION PROGRAM

Elevated noise levels are not anticipated at this site except during drilling activities. Hearing protective devices will be employed at the digression of the SHSO.

TABLES

TABLE 1

PPE Inspection Checklists

Clothing

Before use:

- Determine that the clothing material is correct for the specified tasks at hand.
- Visually inspect for:
    - Imperfect seams
    - Non-uniform coatings
    - Tears
    - Malfunctioning closures
- Hold up to light and check for pinholes.
- Flex product:
    - Observe for cracks
    - Observe for other signs of shelf deterioration
- If the product has been used previously, inspect inside and out for signs of chemical attack:
    - Discoloration
    - Swelling
    - Stiffness

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- Closure failure.
- Tears.
- Punctures.
- Seam Discolorations.

Gloves

Before use:

- Visually inspect for:
    - Imperfect seams
    - Tears, abrasions
    - Non-uniform coating
    - Pressurize glove with air: listen for pinhole leaks.

TABLE 2

Specific Levels of Protection Planned for The Task Assignments at The Site

Level A: Not applicable

Level B: Not applicable

Level C: Not applicable

Level D:

- Coveralls (as appropriate)
- Boots/shoes – chemical resistant with steel toes and shanks
- Safety glasses
- Hardhat (as required)
- Gloves
- Hearing protection (as required)

Note: All site work at this site shall be Level D unless the SHSO determines that levels should be raised to Level C.

APPENDIX A

EMERGENCY CONTACTS

Responsibility	Contact	Telephone *
Fire Department Kittanning Fire Dept 206 S Jefferson St Kittanning PA 16201	Fire Marshall Earl Kline	(Home) 724-321-2028 724-548-2001
Emergency Response		911
Police Department 300 S Mckean St Kittanning, PA	Chief Ed Cassesse	724-543-1538
Ambulance	Hose Company No. 6 Kittanning Ambulance	911 - Dispatch
Hospital (see Figure 3)	Armstrong County Memorial Hospital	(724) 543-8500
National Response Center (Release or Spill)		800-424-8802
Chemical Transport Emergency Center (CHEMTREC)		800-424-9300
Site Health & Safety Officer	Sara Giordano or designate	(724) 347-2101
Office Health & Safety Manager	Sara Giordano	(724) 347-2101
Project Manager	Paul Rogers	(724) 347-2101
Client Contact	Edward T. Franks	(724) 628-9580

APPENDIX B

DIRECTIONS TO THE NEAREST HOSPITAL

ARMSTRONG COUNTY MEMORIAL HOSPITAL
1 NOLTE DRIVE, SUITE 1
KITTANNING, PENNSYLVANIA
(724) 543-8500

Start: 200 N McKean St
Kittanning, PA 16201
End: 1 Nolte Dr
Kittanning, PA 16201-7103
Distance: 6.2 miles **Approximate Travel Time:** 12 mins

Directions:

1. Start at A **200 N MCKEAN ST, KITTANNING** on **ARCH ST** - go **< 0.1** mi
2. Turn R on **N MCKEAN ST** - go **0.1** mi
3. Turn R on **MARKET ST** - go **0.2** mi
4. Continue on **BENJAMIN FRANKLIN HWY** - go **0.3** mi
5. **BENJAMIN FRANKLIN HWY** becomes **BUTLER RD** - go **1.0** mi
6. Turn L on **PA-268** - go **1.0** mi
7. Take **US-422 WEST** - go **2.2** mi
8. Turn L on **LR03010** - go **< 0.1** mi
9. Turn L on **US-422 EAST** - go **1.3** mi
10. Continue on ramp - go **0.2** mi
11. Arrive at B Armstrong County Hospital **1 NOLTE DR, KITTANNING**

Map To: ARMSTRONG COUNTY MEMORIAL HOSPITAL
1 NOLTE DRIVE, SUITE 1
KITTANNING, PENNSYLVANIA
(724) 543-8500

APPENDIX C

FIELD TEAM REVIEW

Each Insite Group, Inc. field member shall sign the section after site-specific training is completed and before being permitted to work on site.

I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provision contained herein. I have been provided with an opportunity to have questions and concerns addressed by the Project Manager.

Site/Project: Arch Street in Kittanning, Pennsylvania

Name Printed	**Signature**	**Date**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

APPENDIX D

APPROVAL PAGE

The Approval Page must be attached and signed by the SHSO, OHSM, Project Manager and Project Principal.

By their signatures, the undersigned certify that this HASP is approved and will be utilized by Insite Group, Inc. personnel at the Arch Street site in Kittanning, Pennsylvania.

Sara Giordano _____ Date _____
Site Health and Safety Officer

Sara Giordano _____ Date _____
Office Health and Safety Manager

Paul Rogers _____ Date _____
Project Manager

APPENDIX E

INCIDENT REPORT

This form should be filled in by the individual staff member involved, **immediately** following an incident, accident, injury or near miss/hit.
***It should be completed** by the end of the shift.*
If the person involved is unable to fill in the form, their Manager/Supervisor must complete it. **(Please print all information)**

1. DETAILS OF PERSON INVOLVED IN INCIDENT

Surname: _____
Given Names: _____
Date of Birth: / / Phone (H): _____
Home Address: _____
_____ Zip Code: _____
Title: _____
Location: _____
Phone (W): _____ Employee No: _____

Employment Status:
☐ Employee ☐ Agency ☐ Contractor
☐ Full Time ☐ Part Time ☐ Casual
☐ Other *(please specify):*

Gender: ☐ Male ☐ Female

2. DETAIL OF INCIDENT

Exact location of incident: _____
_____
_____
_____

Factors contributing to the incident: _____
(What were you doing at the time e.g. pushing trolley)
_____
_____
_____
_____

3. LIKELY CAUSE OF INCIDENT

(Please tick as many as appropriate)
☐ Fall from height ☐ Striking against object
☐ Slip/trip/fall ☐ Vehicle/Traffic
☐ Physical assault ☐ Falling Object
☐ Repetitive movement
☐ Struck by moving object

☐ Exposure – Hot/cold ☐ Contact - electricity
☐ Exposure - Chemical | ☐ Single ☐ Prolonged

☐ Exposure – Biological *(please specify):* _____
☐ Sharps injury ☐ Blade ☐ Needle
☐ Other *(please specify):*
_____
_____

Procedure Type

☐ Set up for procedure ☐ During procedure
☐ Laboratory procedure ☐ Clean up after procedure
☐ Field procedure ☐ During garbage disposal
☐ Other *(please specify):*
_____
_____

4. DETAIL OF INJURY

Did an injury occur? ☐ Yes ☐ No
Bodily Location(s) (eg. Right Wrist): _____
_____
_____

Nature of Injury

☐ Fracture	☐ Sprain/Strain	☐ Needle stick
☐ Chemical exposure	☐ Stress/Anxiety	☐ Dermatitis
☐ Body fluid exposure	☐ Burn/Scald	☐ Puncture
☐ Electric shock	☐ Pain/Discomfort only	

☐ Other *(please specify):* _____
_____

Treatment required at the time of incident occurring?

☐ Report Only ☐ First Aid
☐ Medical Treatment ☐ Time Lost
☐ Follow Up

EQUIPMENT (PPE)

Did this task require PPE? ☐ Yes ☐ No

Was correct PPE being used at time of incident? ☐ Yes ☐ No

Please give details of PPE worn:

☐ Eye Protection ☐ Gloves ☐ Gowns/Aprons
☐ Face Protection ☐ Footwear ☐ Hearing Protection

☐ Other: _____

6. OTHER DETAILS ABOUT INCIDENT

Details of other visitors involved: _____
_____
Did the incident involve a visitor? ☐ Yes ☐ No

Visitors Name: _____

Details of witness(es) involved:

Surname: _____
Given name: _____
Phone (H): _____ Phone (W): _____

Details of supervisor/manager to whom incident was reported

Surname: _____
Given name: _____
Position: _____ Phone: _____
Signature: _____ Date: / /

Signature of person involved in incident: _____
Date: / /

INCIDENT FOLLOW-UP REPORT

This form is to be filled by the **MANAGER / SUPERVISOR** of the staff member involved in the incident.
It must be completed **before the end of the shift** and Forwarded to the appropriate supervisor

1. DETAILS OF MANAGER / SUPERVISOR RESPONSIBLE FOR STAFF MEMBER

Manager / Supervisor's:

Surname: _____

Given Name: _____

Location: _____

Phone: _____

2. DETAILS OF MANAGER / SUPERVISOR OF DEPARTMENT IN WHICH INCIDENT OCCURRED

(If incident occurred in the same department where staff member normally works write "As Above".)

Manager / Supervisor's:

Surname: _____

Given Name: _____

Occupation: _____

Location: _____

Phone: _____

Others involved in incident follow-up process:

(eg. Supervisors or Health and Safety Representative)

i) Surname: _____
Given Name: _____
Occupation: _____
Department: _____
Campus / Location: _____
Phone: _____
ii) Surname: _____
Given Name: _____
Occupation: _____
Department: _____
Campus / Location: _____
Phone: _____

3. ACTION TO BE TAKEN TO PREVENTING AND CONTROL RE-OCCURRENCE: *(please tick as many as applicable)*

This action must be implemented by those involved in the Incident Follow-up process.
All Staff Incident Reports will be followed
.

- ☐ Remove Hazard
- ☐ Clean up / Housekeeping
- ☐ Improve Layout of Work Place
- ☐ Repair Equipment / Tools / Signs
- ☐ Upgrade Equipment / Tools / Signs
- ☐ Improve Inspection Procedure
- ☐ Staff Counselling
- ☐ Staff Training
- ☐ Personal Protective Equipment
  - ☐ Manager to provide
  - ☐ Employee to wear

Please specify details of required action: _____

Other follow-up recommended: _____

4. FOLLOW-UP OF STAFF MEMBER INVOLVED

Did an injury occur? ☐ Yes ☐ No

Treatment required at time of incident occurring:

- ☐ Report Only
- ☐ First Aid
- ☐ Medical Treatment
- ☐ Inpatient Admission
- ☐ Time Lost
- ☐ Follow up
- ☐ Debriefing
- ☐ Counselling

MANAGER / SUPERVISOR

Please ensure that this completed Incident Follow-up Report AND the Staff Incident Report (page 1) as completed by the staff member involved in the incident, are forwarded to the following parties, **by the completion of the shift in which the incident occurred.**

- **Original to:**
- **Copy to:**
- Accident Compensation Act 1985)

APPENDIX F

MATERIAL SAFETY DATA SHEETS

(Material Safety Data Sheets are available in the office.)