YEARLY PROGRESS REPORT AND PILOT TEST

PADEP Facility ID #26-18711
PAUSTIF Claim #1996-0116 (F)
Former Route 119 Amoco
1809 University Drive
Dunbar, Pennsylvania 15431

Prepared for:

Mr. & Mrs. Tim Shell
202 Center Wood Circle
Uniontown, Pennsylvania 15401

Prepared by:

Letterle & Associates, LLC
2859 Oxford Boulevard, Suite 110
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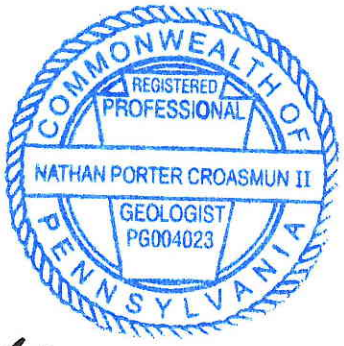

Eric A. Itle, P.G.
Project Scientist

Nathan P. Croasmun II, P.G.
Project Manager

"By affixing my seal to this document, I am certifying that the information is true and correct to the best of my knowledge. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information."

Eric A. Itle, P.G. and Nathan P. Croasmun II, P.G.(signed and sealed this day (April 10, 2012))

April 2012

Letterle & Associates, LLC
Facility ID ##26-18711
Former Route 119 Amoco
1809 University Drive
Dunbar, Pennsylvania 15431

Corrective Action Process Report/Plan Cover Sheet

CHAPTER 245
STORAGE TANK ACT

- ☐ **Site Characterization Report – Section 245.310(b)**
- ☐ **Site Characterization Report – Site-Specific Standard**
- Additional ■ **Site Characterization Report – Statewide Health or Background Standard**
- ☐ **Site Characterization Report PLUS – Statewide Health Standard**
- ☐ **Remedial Action Plan – Statewide Health or Background Standard**
- ☐ **Remedial Action Plan – Site Specific Standard**
- ■ **Remedial Action Progress Report**
- ☐ **Remedial Action Completion Report – Statewide Health or Background Standard**
- ☐ **Remedial Action Completion Report – Site-Specific Standard**
- ☐ **Post Remediation Care Plan Report**
- ☐ **Environmental Covenant**

(check all that apply to the enclosed submission)

Letterle &
Associates, LLC
Environmental Consulting & Remediation Services

2859 Oxford Boulevard, Suite 110
Allison Park, PA 15101

412. 486. 0600
412. 486. 0674 fax

April 13, 2012

Ms. Amy Kemerer, P.G.
Pennsylvania Department of Environmental Protection
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222

Re: **Yearly Progress Report and Pilot Test**
Facility ID #26-18711
Rt. 119 Amoco
1809 University Drive
Dunbar, Pennsylvania 15431

Dear Ms. Kemerer:

Enclosed please find a copy of the yearly progress report and pilot test prepared by Letterle & Associates, LLC on behalf of Tim Shell for the Route 119 Amoco located in Dunbar, Pennsylvania.

Should you have any questions, please call Nate Croasmun, Project Manager at 412.486.0600 extension 306.

Sincerely,

LETTERLE & ASSOCIATES, LLC

Stephanie S. Profeta
Staff Scientist

Enc.

cc: Timothy Shell
Linda Crabb, ICF Consulting - **USTIF Claim #96-116(F)**

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GENERAL INFORMATION

Client Contact:	Timothy and Michelle Shell (Shells)
Letterle Project Manager:	Nathan P. Croasmun II, P.G.
Regulatory Contact:	Amy Kemerer, P.G.
PADEP Facility ID#:	26-18711
PAUSTIF Claim #:	1996-0116 (F)
Number of Wells:	Thirteen monitor wells (MW-3, MW-4, MW-6, MW-7, MW-8, and MW-10 through MW-17. Six soil vapor monitor points (VP-1 through VP-6)
Wells Containing LNAPL	0

SITE HISTORY

Environmental characterization activities commenced at the site when evidence of a gasoline release was discovered in May 1996, due to loose swing joints and coupler connections along the piping run to the unleaded gasoline dispensers. A written notification of reportable release (NORR) was subsequently submitted to the PADEP. Previous environmental site activities were performed by Chambers Environmental (Chambers) (1996 – 2000), RETTEW (2000-2005), and Precise Tank Modifications (PTM) (2005), as described in the PADEP-approved (with modifications) 2006 SCR submitted by Letterle & Associates, LLC (Letterle). The following sections summarize the earlier activities and results.

1996-June 2000 (Chambers)

Chambers was retained as the environmental consultant in 1996 following the discovery of the unleaded gasoline release and directed the completion of 22 borings, installation of six monitor wells (MW-1 through MW-6) and two groundwater recovery wells (RW-1 and RW-2). Impact was identified within the underlying bedrock aquifer.

Chambers also completed a soil vapor extraction (SVE)/air sparging (AS) pilot test after installing three SVE wells (SVE-1 through SVE-3), two AS wells (AS-1 and AS-2), and six vapor monitoring probes (VMP-1 through VMP-6).

Chambers submitted a RAP in July 1998 proposed using SVE/AS to remove petroleum impact to the soil and groundwater to attain the PADEP Used/Non-Residential Medium Specific Concentration (U/NR MSCs) for residential, used aquifers. Initially, a SVE system would operate until the vapor concentrations declined, and AS technology would be added to remove dissolved petroleum constituents from groundwater. The RAP also noted that free product (amount not specified) was measured within SVE-3 possibly in June or early July 1998. The PADEP formally approved the RAP within a letter of correspondence dated August 24, 1998. The SVE system was activated on October 12, 1998 and the AS system was activated on March 22, 1999. Subsequently, in March 2000, PADEP requested that the RAP be reassessed due to possible volatile organic carbon (VOC) releases to air. The SVE and AS systems were deactivated on June 21, 2000.

June 2000-July 2005 (RETTEW)

In June 2000, RETTEW was retained to review the progress and effectiveness of the remedial action at the Rt. 119 site. In July 2000, RETTEW became the environmental consultant at the site. Subsequently, RETTEW modified the SVE/AS system and initiated bioaugmentation remedial methods to treat the petroleum constituents in the groundwater. According to RETTEW, the SVE system was effectively removing volatile petroleum constituents from subsurface soils in the remediation area; however, the AS system appeared to be less effective at treating the dissolved hydrocarbon phase in groundwater.

RETTEW proposed to modify the existing SVE/AS system with bioaugmentation activities including the installation of high diffusion air bubblers (HDABs) within the AS system wells (MW-1, MW-3, RW-2, SVE-2, and SVE-3) to add dissolved oxygen to the groundwater, and the addition of hydrocarbon- and MTBE-degrading enzyme complexes, nutrients, and bacterial consortium to aid in the removal of the dissolved phase constituents. Soil attainment sampling was also recommended to confirm that the SVE system had successfully removed the absorbed phase petroleum constituents from the soil.

Through August 2005, RETTEW, the PADEP, and the Shells communicated through various progress reports and correspondence regarding the site characterization and remedial action activities. The following is a summary of pertinent correspondence:

- The HDABs were apparently installed and the addition of bioaugmentation began in July 2000. One groundwater monitoring event was conducted in August 2000.

- The remedial actions recommended in the RETTEW Revised RAP were not approved by the PADEP. A new SCR/RAP was requested by the PADEP in December 2000, and remediation activities were considered to be interim remedial actions.

- On March 28, 2001, RETTEW and the PADEP met to discuss the PADEP's concerns regarding the potential for dissolved MTBE to migrate into deeper aquifer zones and to the northwest through underlying geologic structural features.

- On April 5, 2001, the PADEP issued a notice of violation and requested a new SCR/RAP.

- The PADEP reviewed the RETTEW Workplan for additional site characterization activities (geologic evaluation, deeper aquifer investigation, etc.) and the RETTEW request in May 2001 to use bioaugmentation as an interim remedial action. The PADEP did not concur with the use of bioaugmentation and requested a time frame for completion of a SCR.

- On June 12, 2001, RETTEW notified the PADEP that bioaugmentation activities would begin after July 16, 2001 as an interim remedial action until a formal RAP was approved and implemented.

- From July 23 through July 27, 2001, RETTEW directed the installation of a deep well (DW-1) at the site to evaluate the vertical extent of the dissolved phase constituents.

- RETTEW recommended a review of previous site ownership and historical aerial photography to characterize former site usage, an evaluation of the USTs compliance status, evaluation of the liquid levels within the USTs, and an evaluation of a gas chromatograph fingerprint analysis of the water/sludge sample collected from SVE-3. On July 7, 2004, each of the five USTs contained one to 12 inches of liquid. The fingerprint analysis indicated that the contaminant in the sample might contain constituents of diesel fuel and/or kerosene.

- Quarterly groundwater monitoring was performed at the site from August 2000 to July 2005. While unleaded gasoline constituents significantly decreased since remediation began, residual concentrations of benzene and MTBE above the PADEP U/NR MSCs were in several on-site wells (MW-3, RW-1, RW-2, SVE-1 through SVE-3, and AS-2).

- The remedial system was deactivated in July 2005.

January 2005 UST Closure (PTM)

In January 2005, PTM removed five USTs from the property. The PTM UST Closure Report was submitted to the PADEP in February 2005. A RETTEW representative was present during a part of the UST closure activities to observe subsurface environmental conditions in the vicinity of the UST field.

PTM documented that the USTs and approximately 100 feet of piping were in good condition with no problems. The excavated soil (approximately 86 tons) had a petroleum odor and was considered impacted. Impacted water was encountered six inches below the ground surface (bgs) in the fill material. The source of the contamination was not identified. According to RETTEW, light non-aqueous phase liquid (LNAPL) was observed on the groundwater excavation of USTs #001 through #003.

Interim remedial actions performed at the site by PTM included the removal and proper disposal of the waste from the USTs and the excavation of approximately 86 tons of petroleum-impacted soil.

August 2005-September 2006 (Letterle)

Letterle was retained by the Shells in August 2005 to complete environmental site characterization activities at the former Route 119 Amoco. A SCR was completed by Letterle and submitted to the PADEP in September 2006. A summary of site characterization activities are described as follows:

- Additional soil sampling (GB-1 through GB-19) was conducted at the site in May 2006 to further delineate soil quality at the site, and to verify if remedial actions performed at the site achieved the requirements for demonstration of attainment of the PADEP Statewide Health Standards (SHS) for soil. The analytical results of soil samples indicated that residual unleaded gasoline constituents exceeded the PADEP SHS in the overburden soil at two isolated locations in the vicinity of the former UST system area. A soil sample collected from GB-14 (0–2 feet bgs) exceeded the PADEP SHS for benzene, toluene, and naphthalene. A soil sample collected from GB-2 exceeded the naphthalene PADEP SHS.

- The PADEP informed Letterle during a February 2006 site meeting that the remedial system wells installed by Chambers were inappropriate for monitoring groundwater quality at the site. Therefore, Letterle responded by installing three additional monitor wells (MW-7 through MW-9) at the site.

- Three vapor monitor point implants (VP-1 through VP-3) were installed adjacent to the on-property building on May 9, 2006. The soil vapor results indicated that the PADEP residential and non-residential standards were exceeded in VP-2.

- The exposure pathway analysis indicated that the indirect contact from the soil pathway by inhalation is the only potential exposure pathway that currently exists at the site.

In a letter dated February 23, 2007, the September 2006 SCR prepared by Letterle was approved by the PADEP with modifications. Letterle has conducted quarterly groundwater sampling since May 2006. A summary of additional site characterization activities is described in the following sections.

On June 14, 2007, Letterle met with the PADEP at the site to discuss additional site characterization activities. In October 2007, additional on-site monitor wells (MW-10 and MW-11) were installed to fully delineate the release to groundwater in the northwest portion of the site. Groundwater analytical results from monitor wells MW-10 and MW-11 indicated additional delineation of the contaminate plume was necessary off-site; therefore, on September 23, 2008, Letterle installed off-site monitor well MW-12 on the Martin property located approximately 100 feet west of the site. Letterle installed an additional soil vapor point VP-4 on February 13, 2009 on the southeast corner of the Martin residence to monitor indoor air quality.

On August 24, 2010, Letterle submitted a letter to the PADEP requesting a reduction in sampling requirements so that monitor wells which had been below the PADEP SHS for at least eight quarters (i.e., MW-2, MW-6, MW-7, MW-8, and MW-9) be eliminated from the groundwater monitoring program and properly abandoned in accordance with Pennsylvania well abandonment requirements.

On September 2, 2010, Letterle met with the PADEP at the site to discuss the letter correspondence sent on August 24, 2010. The PADEP approved the abandonment of monitor wells MW-2 and MW-9; however, requested that monitor wells MW-6, MW-7, and MW-8 continue to be sampled. Letterle also gained PADEP-approval during the site visit to abandon all former site remediation wells. In addition, the PADEP requested that the extent of petroleum-impacted groundwater (identified in monitor wells MW-10 and MW-11) be delineated off-site to the west and northwest of the site and Letterle requested the PADEP confirm designation of MW-3, MW-10, and MW-11 as point of compliance (POC) wells.

Additional site characterization activities were completed, which included soil boring advancement, soil vapor point installations, and remedial pilot testing. Quarterly groundwater sampling was also conducted as described in the following sections.

ADDITIONAL INVESTIGATION METHODS AND PROCEDURES

Advancement of Borings

A total of two borings were advanced at the site in February 2012 to further characterize soil vapor quality at the off-site Martin residence located at 105 Hi-Way Supply Road, as requested by the PADEP in January 2012 following correspondence with the off-site property owner regarding potential soil vapor concerns. Soil borings SB-18 was advanced approximately ten (10) feet south of the north-northwest corner of the residence. Soil boring SB-19 was installed approximately 17 feet north of the south-southwest corner of the residence (**Figure 1**).

A 1.25-inch diameter by 8.25-inch long PVC well screen connected to polyethylene tubing was placed near the base of the borehole. The implants were installed at a depth of eight feet bgs, which was above the saturated zone, and was subsequently completed as vapor monitoring points (VP-5 and VP-6). Clean, coarse filter sand was placed in the annulus around the well screen interval and extended to approximately one foot above the top of the screen. Granular bentonite was used to fill the remaining annular space to the ground surface. The polyethylene tubing was sealed at the end with a silicon membrane fitting.

PID results ranged from ND to 2.5 in VP-2 (6-8 feet). The soil boring and VP locations are shown on **Figure 1**. Detailed boring logs (including PID results) and vapor point completion details are included in **Appendix A**.

Soil vapor samples were subsequently collected on February 7, 2012 from VP-5 and VP-6. A soil vapor sample was not collected from vapor point VP-4 due to water in the vapor point. Prior to sampling, the VPs were purged with a PID, and readings of the vapors purged ranged from 0.0 ppm to 3.4 ppm (VP-6).

Soil Vapor Sampling and Analysis

On February 7, 2012, vapor samples were collected from two off-site vapor points (VP-5 and VP-6 with laboratory-certified Summa® canisters. Prior to sampling, the VPs were purged for approximately four minutes with a PID. The soil vapor samples were submitted for analysis of unleaded gasoline parameters via USEPA SW-846 Method TO-15. The lab analysis included the following parameters: BTEX, MTBE, cumene, and naphthalene.

INVESTIGATION RESULTS

Soil Vapor Analytical Results

The analytical results from the soil vapor samples (VP-5 and VP-6) collected on February 7, 2012 indicated that the concentrations of all unleaded gasoline parameters were below the PADEP Indoor Air Criteria and Odor Thresholds for residential and nonresidential properties. The results of the soil vapor analyses are summarized on **Table 1**. The complete laboratory reports are included in **Appendix B**.

Groundwater Monitoring

Groundwater gauging and monitoring from the most recent event on January 12, 2012 is described below.

Groundwater Gauging

Prior to well purging, the depth to groundwater in each well was measured using an electronic water level probe accurate to the nearest 0.01 foot. The groundwater gauging data collected during the most recent sampling event on January 12, 2012 indicated the following:

- The depth to groundwater in the deep bedrock aquifer ranged from 27.47 feet below TOC in MW-6 to 44.61 feet below TOC in MW-7.
- The depth to groundwater in the shallow bedrock aquifer ranged from 12.35 feet below TOC in MW-14S to 13.45 feet below TOC in MW-15S.
- The horizontal hydraulic gradient in the deep bedrock aquifer was approximately 0.057 ft/ft (based on groundwater elevation data for monitor wells MW-10 (1,205.29 ft) and MW-17 (1,192.08 ft))
- The apparent groundwater flow direction at the site is to the southwest with local mounding in the vicinity of monitor well MW-10, and to the west off-site to the west of the site (**Figure 2**).

The groundwater gauging and elevation results are on **Table 2**.

Groundwater Sampling

Sampling Methodology

Each well was purged and sampled using hand-bailing techniques with dedicated polyethylene disposable bailers. Groundwater samples were collected from monitor wells MW-4, MW-6, MW-7, MW-8, and MW-10 through MW-17. Quality Assurance/Quality Control (QA/QC) samples (consisting of trip blank and duplicate samples) were also collected during the sampling event. The groundwater samples were submitted for laboratory analysis of unleaded gasoline parameters via USEPA SW-846 Method 8260B and included BTEX, MTBE, cumene, and naphthalene.

Sampling Results

The January 12, 2012 groundwater analytical results exceeded the PADEP SHS for the following parameters:

- Benzene in one on-site well (MW-11) and three off-site wells (MW-12, MW-14S, and MW-15S), and
- MTBE in one on-site well (MW-11) and three off-site wells (MW-12, MW-13, and MW-14S), and

The groundwater sampling results are illustrated on **Figure 3** and summarized on **Table 3**. The

complete laboratory analytical report is included in **Appendix B**.

Data Evaluation

The groundwater data collected for monitor wells MW-11 and MW-12 was evaluated using the Mann-Kendall statistical test. The benzene and MTBE analytical data from monitor wells MW-11 and MW-12 was evaluated using the most recent ten sampling events from December 2008 through January 2011 (most recent sampling event) (**Appendix C**). The Mann-Kendall Statistical Test is a non-parametric statistical test used to determine whether a data set indicates an increasing trend, a decreasing trend, a stable trend, or no reliable trend. The minimum data set required by the statistical test is four; however, the PADEP requests a 10 point minimum; therefore, monitor wells MW-13, MW-14S and MW-15S were not evaluated. A review of the Mann-Kendall statistical trend analysis spreadsheets indicates the following:

- stable trends for benzene and naphthalene in on-site monitor well MW-11,
- decreasing trends for MTBE in on-site monitor well MW-11
- increasing trends for benzene and MTBE in off-site monitor well MW-12.

Furthermore, groundwater analytical data collected from monitor wells MW-11 and MW-12 with current benzene concentrations of 5 µg/l or higher and current MTBE concentrations of 20 µg/l or higher, and from monitor well MW-11 with current naphthalene concentrations of 100 µg/l or higher, were utilized to prepare graphical depictions of benzene, MTBE, and naphthalene. The graphs were prepared using analytical data concentrations from January 2008 through January 2012 (**Appendix D**). The hydrographs illustrate benzene, MTBE, and naphthalene concentration trendlines that increase, decrease, or depict no reliable trend to date as described below. A review of the groundwater versus elevation trend graphs indicates the following:

- Benzene concentration trendline for on-site monitor well MW-11 is slightly increasing
- MTBE and naphthalene concentration trendlines for on-site monitor well MW-11 are decreasing
- Benzene and MTBE concentration trendlines for off-site monitor well MW-12 are increasing

REMEDIAL PILOT TESTING

Letterle performed remedial pilot testing at the site on February 9, 2012. Pilot test activities were conducted in order to assess the applicability of groundwater extraction in conjunction with soil vapor extraction (SVE) to remediate hydrocarbon-impacted groundwater at the site, specifically in on-site monitor wells MW-10 and MW-11 and off-site monitor well MW-12. The pilot test involved the simultaneous recovery of subsurface vapor and groundwater from a designated extraction well (MW-11), while monitoring water table drawdown and induced vacuum in surrounding monitor wells.

The results of the pilot test depict a representation of the site's bedrock aquifer hydraulic and pneumatic properties. During the VEGE pilot test on MW-11, the bedrock aquifer yield was approximately 0.83 gpm under an applied vacuum of 60 in H_2O after six hours of extraction. A vapor

extraction rate of 90 scfm at 60 in Hg is obtainable during the extraction of the water table, which will result in a groundwater capture zone of 78 feet. A pneumatic ROI could not be calculated due to the lack of vacuum response in the monitor wells. The aquifer yield and groundwater capture zone calculated from the test on MW-11 reveals an accurate representation of the hydraulic and pneumatic properties and capabilities of the bedrock at the site. The installed depth of MW-11 provides an adequate column of water (12.2 feet) that when extracted, results in a large cone of groundwater depression, which in turn results in the large influence area.

Groundwater drawdown was not observed in upgradient monitor well MW-8 or in downgradient monitor wells MW-14S, MW-15S, MW-16, and MW-17. Since MW-11 is a 2-inch diameter well, it is reasonable to assume that a 4-inch diameter well would yield a higher flowrate and a larger hydraulic capture zone and possible pneumatic ROI, provided the groundwater can be drawn down to the bottom of the well (50 feet bgs). Therefore, Letterle suggests that a four-inch diameter recovery well be installed at the location of MW-11 before any future FSR events are conducted. The results also indicate that a high vacuum may need to be applied to the VEGE system augmented by pneumatic pumps to realize the pneumatic ROI. VEGE would be an effective and aggressive remediation strategy in the bedrock areas of the plume to reduce adsorbed and dissolved phase petroleum hydrocarbons in subsurface bedrock and groundwater. The pilot test summary report is included in **Appendix E**.

On February 10, 2012, approximately 300 gallons of extracted groundwater was transported off-site by McCutcheon Enterprises, Inc. Biosolids Treatability Facility in Apollo, Pennsylvania. The waste disposal receipt is included in **Appendix F**.

CONCLUSIONS

Environmental site characterization activities were performed in accordance with 25 Pa. Code §245.309 to evaluate soil and groundwater quality at the Former Route 119 Amoco site. The site characterization activities included advancement of borings; installation of monitor wells; and soil and groundwater sampling.

Findings of the additional site activities include the following:

- Two soil vapor monitor points were installed off-site at the Martin residence to monitor potential soil vapor quality. The analytical results from the soil vapor samples (VP-5 and VP-6) collected on February 7, 2012 indicated that the concentrations of all unleaded gasoline parameters were below the PADEP Indoor Air Criteria and Odor Thresholds for residential and nonresidential properties.

- Letterle completed four quarterly groundwater gauging and sampling events on a quarterly basis since January 2011.

- Groundwater was encountered within the deep bedrock aquifer at depths ranging from 27.47feet below TOC in MW-6 to 44.61 feet below TOC in MW-7 (January 12, 2012). Based on the groundwater contour elevations, the interpreted groundwater flow direction was

to the southwest with local mounding in the vicinity of monitor well MW-10, and to the west off-site to the west of the site.

- Groundwater impact has migrated off-site to the west.

PLANNED ACTIVITIES

During a September 2, 2010 site meeting between PADEP and Letterle, PADEP requested that all future RAPRs be submitted on an annual basis. Activities currently planned for the 2nd, 3rd, and 4th Quarters of 2012 and the 1st Quarter of 2013 include:

- Quarterly groundwater gauging and monitoring of on-site monitor wells MW-3, MW-4, MW-7, MW-8, MW-10, MW-11, and off-site monitor wells MW-6 and MW-12 through MW-17
- Possible installation of a 4-inch recovery at the monitor well MW-11 location for potential focus source remediation (FSR) events

TABLES

TABLE 1
SOIL VAPOR ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample	Date	Benzene (mg/m^3)	Toluene (mg/m^3)	Ethylbenzene (mg/m^3)	Xylenes (mg/m^3)	MTBE (mg/m^3)	Cumene (mg/m^3)	Naphthalene (mg/m^3)
VP-1	06/21/10	0.00747	0.0935	0.0115	0.0525	<0.0032	<0.0043	<0.0046
	04/15/10	<0.22	<0.25	<0.29	<0.88	<0.24	<0.33	<0.35
	08/31/06	Not sampled						
	05/08/06	<0.227	<0.268	<0.309	<0.309	<0.257	<0.35	<0.373
VP-2	06/21/10	<0.057	<0.067	0.15	<0.227	<0.064	<0.087	<0.093
	04/15/10	<0.22	<0.25	<0.29	<0.88	<0.24	<0.33	<0.35
	08/31/06	8.82	<0.268	<0.309	0.309	<0.257	<0.35	<0.373
	05/08/06	40.4	7.7	<0.309	<0.309	<0.257	<0.35	<0.373
VP-3	06/21/10	0.0101	0.0847	<0.0066	<0.0234	<0.0055	<0.0075	<0.008
	04/15/10	<0.18	0.277	<0.25	<0.74	<0.2	<0.28	<0.3
	08/31/06	Not sampled						
	05/08/06	<0.227	0.268	<0.309	0.44	<0.257	<0.35	<0.373
VP-4	02/07/12	VP-4 was not sampled due to water in the vapor point						
	06/21/10	<0.045	<0.053	<0.061	0.181	<0.051	<0.069	<0.073
	04/15/10	<0.015	<0.018	<0.02	<0.061	<0.017	<0.023	<0.024
	06/05/09	0.0143	0.0368	0.0331	0.2173	<0.018	<0.012	0.0197
	02/17/09	0.0422	0.0981	0.0274	0.135	<0.007	<0.0048	0.0261
VP-5	02/07/12	0.0029	0.0034	0.004	0.0119	0.0033	0.0045	0.0048
VP-6	02/07/12	0.00422	0.0502	0.003	0.0087	0.0025	0.0033	0.0036

Residential MSC (mg/m^3)[1]	0.27	56	1.9	14	8.1	54	0.42
Non-Residential MSC (mg/m^3)[1]	1.1	120	73	30	31	110	0.88

Notes:
MTBE - methyl tertiary butyl ether
(1) Transfer Factor of 0.01 applied to the Indoor Air Quality MSC per PADEP Technical Guidance Manual.

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-1	05/12/06	Well destroyed - not measured		
MW-2	MW-2 Abandoned In September 2010			
(40.75/25)	08/27/10	1,241.55	37.53	1,204.02
[4]	06/25/10	1,241.55	20.24	1,221.31
	03/25/10	1,241.55	22.90	1,218.65
	11/05/09	1,241.55	37.72	1,203.83
	08/17/09	1,241.55	37.11	1,204.44
	06/05/09	1,241.55	28.52	1,213.03
	03/24/09	1,241.55	37.41	1,204.14
	12/18/08	1,241.55	37.33	1,204.22
	09/30/08	1,241.55	37.70	1,203.85
	04/15/08	1,241.55	33.48	1,208.07
	01/14/08	1,241.55	36.44	1,205.11
	10/15/07	1,241.55	37.70	1,203.85
	06/06/07	499.11	37.70	461.41
	05/22/07	499.11	37.49	461.62
	05/14/07	499.11	37.40	461.71
	05/12/07	499.11	37.47	461.64
MW-3*	01/12/12	1,235.72	0.61	1,235.11
(36/20)	11/08/11	1,235.72	1.44	1,234.28
[4]	07/15/11	1,235.72	1.15	1,234.57
[4]	05/09/11	1,235.72	0.91	1,234.81
	01/28/11	1,235.72	NG	--
	12/20/10	1,237.88	14.52	1,223.36
	08/27/10	1,237.88	19.38	1,218.50
	06/25/10	1,237.88	15.12	1,222.76
	03/25/10	1,237.88	1.33	1,236.55
	11/05/09	1,237.88	14.69	1,223.19
	08/17/09	1,237.88	14.32	1,223.56
	06/05/09	1,237.88	8.55	1,229.33
	03/24/09	1,237.88	15.39	1,222.49
	12/18/08	1,237.88	0.99	1,236.89
	09/30/08	1,237.88	19.01	1,218.87
	04/15/08	1,237.88	13.75	1,224.13
	01/14/08	1,237.88	9.89	1,227.99
	10/15/07	1,237.88	19.19	1,218.69
	06/06/07	495.80	21.45	474.35
	05/22/07	495.80	16.46	479.34
	05/14/07	495.80	17.46	478.34
	05/12/07	495.80	12.86	482.94

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-4*	01/12/12	1,233.65	34.75	1,198.90
(50.75/20)	11/08/11	1,233.65	34.98	1,198.67
[4]	07/15/11	1,233.65	35.09	1,198.56
	05/09/11	1,233.65	34.48	1,199.17
	01/28/11	1,233.65	35.06	1,198.59
	12/20/10	1,236.13	35.01	1,201.12
	08/27/10	1,236.13	35.53	1,200.60
	06/25/10	1,236.13	34.96	1,201.17
	03/25/10	1,236.13	34.43	1,201.70
	11/05/09	1,236.13	35.04	1,201.09
	08/17/09	1,236.13	35.02	1,201.11
	06/05/09	1,236.13	34.62	1,201.51
	03/24/09	1,236.13	35.59	1,200.54
	12/18/08	1,236.13	35.19	1,200.94
	09/30/08	1,236.13	35.46	1,200.67
	04/15/08	1,236.13	34.71	1,201.42
	01/14/08	1,236.13	34.32	1,201.81
	10/15/07	1,236.13	35.62	1,200.51
	06/06/07	493.70	34.97	458.73
	05/22/07	493.70	34.81	458.89
	05/14/07	493.70	34.78	458.92
	05/12/07	493.70	34.66	459.04
MW-5	11/14/05	Well destroyed - not measured		

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-6*	01/12/12	1,229.13	27.47	1,201.66
(46/20)	11/08/11	1,229.13	27.62	1,201.51
[4]	07/15/11	1,229.13	27.95	1,201.18
	05/09/11	1,229.13	27.48	1,201.65
	01/28/11	1,229.13	28.26	1,200.87
	12/20/10	1,231.64	27.66	1,203.98
	08/27/10	1,231.64	28.70	1,202.94
	06/25/10	1,231.64	27.84	1,203.80
	03/25/10	1,231.64	27.29	1,204.35
	11/05/09	1,231.64	27.79	1,203.85
	08/17/09	1,231.64	27.85	1,203.79
	06/05/09	1,231.64	27.37	1,204.27
	03/24/09	1,231.64	28.04	1,203.60
	12/18/08	1,231.64	27.66	1,203.98
	09/30/08	1,231.64	27.75	1,203.89
	04/15/08	1,231.64	27.40	1,204.24
	01/14/08	1,231.64	28.29	1,203.35
	10/15/07	1,231.64	28.10	1,203.54
	06/06/07	489.19	28.07	461.12
	05/22/07	489.19	28.09	461.10
	05/14/07	489.19	27.85	461.34
	05/12/07	489.19	27.63	461.56

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-7*	01/12/12	1,241.99	44.61	1,197.38
(50/15)	11/08/11	1,241.99	44.62	1,197.37
[2]	07/15/11	1,241.99	44.13	1,197.86
	05/09/11	1,241.99	44.66	1,197.33
	01/28/11	1,241.99	44.58	1,197.41
	12/20/10	1,244.14	44.71	1,199.43
	08/27/10	1,244.14	44.79	1,199.35
	06/25/10	1,244.14	41.42	1,202.72
	03/25/10	1,244.14	44.07	1,200.07
	11/05/09	1,244.14	44.52	1,199.62
	08/17/09	1,244.14	44.62	1,199.52
	06/05/09	1,244.14	44.49	1,199.65
	03/24/09	1,244.14	44.61	1,199.53
	12/18/08	1,244.14	44.41	1,199.73
	09/30/08	1,244.14	44.62	1,199.52
	04/15/08	1,244.14	44.17	1,199.97
	01/14/08	1,244.14	44.14	1,200.00
	10/15/07	1,244.14	44.74	1,199.40
	06/06/07	502.06	45.02	457.04
	05/22/07	502.06	46.25	455.81
	05/14/07	502.06	44.34	457.72
	05/12/07	502.06	38.75	463.31
MW-8*	01/12/12	1,236.95	36.80	1,200.15
(51/15)	11/08/11	1,236.95	37.10	1,199.85
[2]	07/15/11	1,236.95	37.11	1,199.84
	05/09/11	1,236.95	36.58	1,200.37
	01/28/11	1,236.95	37.31	1,199.64
	12/20/10	1,239.09	37.23	1,201.86
	08/27/10	1,239.09	37.75	1,201.34
	06/25/10	1,239.09	37.18	1,201.91
	03/25/10	1,239.09	36.49	1,202.60
	11/05/09	1,239.09	37.25	1,201.84
	08/17/09	1,239.09	37.23	1,201.86
	06/05/09	1,239.09	36.65	1,202.44
	03/24/09	1,239.09	37.82	1,201.27
	12/18/08	1,239.09	37.58	1,201.51
	09/30/08	1,239.09	37.84	1,201.25
	04/15/08	1,239.09	36.94	1,202.15
	01/14/08	1,239.09	36.75	1,202.34
	10/15/07	1,239.09	38.13	1,200.96
	06/06/07	497.01	37.33	459.68
	05/22/07	497.01	37.14	459.87
	05/14/07	497.01	37.07	459.94
	05/12/07	497.01	25.82	471.19

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-9	MW-9 Abandoned In September 2010			
(55/15)	08/27/10	1,239.09	38.45	1,200.64
[2]	06/25/10	1,239.09	37.96	1,201.13
	03/25/10	1,239.09	37.23	1,201.86
	11/05/09	1,239.09	37.92	1,201.17
	08/17/09	1,239.09	37.97	1,201.12
	06/05/09	1,239.09	37.35	1,201.74
	03/24/09	1,239.09	38.61	1,200.48
	12/18/08	1,239.09	37.92	1,201.17
	09/30/08	1,239.09	38.57	1,200.52
	04/15/08	1,239.09	37.62	1,201.47
	01/14/08	1,239.09	37.23	1,201.86
	10/15/07	1,239.09	38.72	1,200.37
	06/06/07	497.01	37.99	459.02
	05/22/07	497.01	37.80	459.21
	05/14/07	497.01	37.43	459.58
	05/12/07	497.01	37.89	459.12
MW-10*	01/12/12	1,239.23	33.94	1,205.29
(50/15)	11/08/11	1,239.23	34.77	1,204.46
[2]	07/15/11	1,239.23	33.04	1,206.19
	05/09/11	1,239.23	31.49	1,207.74
	01/28/11	1,239.23	36.52	1,202.71
	12/20/10	1,241.32	36.95	1,204.37
	08/27/10	1,241.32	33.13	1,208.19
	06/25/10	1,241.32	31.82	1,209.50
	03/25/10	1,241.32	38.72	1,202.60
	11/05/09	1,241.32	39.53	1,201.79
	08/17/09	1,241.32	38.98	1,202.34
	06/05/09	1,241.32	38.49	1,202.83
	03/24/09	1,241.32	39.12	1,202.20
	12/18/08	1,241.32	39.86	1,201.46
	09/30/08	1,241.32	39.96	1,201.36
	04/15/08	1,241.32	38.78	1,202.54
	01/14/08	1,241.32	39.24	1,202.08
	10/15/07	1,241.32	38.54	1,202.78

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-11*	01/12/12	1,236.68	36.53	1,200.15
(50/15)	11/08/11	1,236.68	36.68	1,200.00
[2]	07/15/11	1,236.68	37.14	1,199.54
	05/09/11	1,236.68	36.73	1,199.95
	01/28/11	1,236.68	37.17	1,199.51
	12/20/10	1,238.82	37.24	1,201.58
	08/27/10	1,238.82	37.69	1,201.13
	06/25/10	1,238.82	37.27	1,201.55
	03/25/10	1,238.82	36.39	1,202.43
	11/05/09	1,238.82	36.93	1,201.89
	08/17/09	1,238.82	36.81	1,202.01
	06/05/09	1,238.82	36.44	1,202.38
	03/24/09	1,238.82	36.92	1,201.90
	12/18/08	1,238.82	37.25	1,201.57
	09/30/08	1,238.82	37.13	1,201.69
	04/15/08	1,238.82	37.12	1,201.70
	01/14/08	1,238.82	37.13	1,201.69
	10/15/07	1,238.82	37.17	1,201.65
MW-12*	01/12/12	1,237.47	38.41	1,199.06
(50/20)	11/08/11	1,237.47	39.25	1,198.22
[2]	07/15/11	1,237.47	39.53	1,197.94
	05/09/11	1,237.47	37.35	1,200.12
	01/28/11	1,237.47	38.83	1,198.64
	12/20/10	1,239.92	38.69	1,201.23
	08/27/10	1,239.92	38.15	1,201.77
	06/25/10	1,239.92	37.71	1,202.21
	03/25/10	1,239.92	39.54	1,200.38
	11/05/09	1,239.92	40.56	1,199.36
	08/17/09	1,239.92	39.96	1,199.96
	06/05/09	1,239.92	39.63	1,200.29
	03/24/09	1,239.92	40.16	1,199.76
	12/18/08	1,239.92	38.89	1,201.03
	09/30/08	1,239.92	40.43	1,199.49

TABLE 2
MONITOR WELL GAUGING DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Well ID	Date	TOC Elevation (ft-msl)	GW Depth (ft)	GW Elevation (ft-msl)
MW-13*	01/12/12	1,230.77	33.02	1,197.75
	11/08/11	1,230.77	33.11	1,197.66
	07/15/11	1,230.77	32.99	1,197.78
	05/09/11	1,230.77	32.23	1,198.54
	01/28/11	1,230.77	33.06	1,197.71
MW-14S*	01/12/12	1,231.26	12.35	1,218.91
	11/08/11	1,231.26	12.65	1,218.61
	07/15/11	1,231.26	14.48	1,216.78
	05/09/11	1,231.26	12.53	1,218.73
	01/28/11	1,231.26	14.87	1,216.39
MW-15S*	01/12/12	1,232.90	13.45	1,219.45
	11/08/11	1,232.90	13.55	1,219.35
	07/15/11	1,232.90	16.24	1,216.66
	05/09/11	1,232.90	14.27	1,218.63
	01/28/11	1,232.90	16.83	1,216.07
MW-16*	01/12/12	1,233.64	44.11	1,189.53
	11/08/11	1,233.64	45.44	1,188.20
	07/15/11	1,233.64	46.33	1,187.31
	05/09/11	1,233.64	44.71	1,188.93
	01/28/11	1,233.64	35.76	1,197.88
MW-17*	01/12/12	1,231.48	39.40	1,192.08
	11/08/11	1,231.48	39.28	1,192.20
	07/15/11	1,231.48	39.38	1,192.10
	05/09/11	1,231.48	38.78	1,192.70
	01/28/11	1,231.48	39.46	1,192.02

Notes:

TOC	top of casing
GW	groundwater
ft-msl	feet above mean sea level
(40.75/25)	total depth of well from grade / screen length (feet)
[4]	monitor well diameter (inches)
NG	not gauged due to snow pile

1. Elevations are based on arbitrary survey data from RETTEW Associates, Inc.
2. Letterle & Associates, LLC resurveyed all monitor wells after the installation of MW-10 and MW-11. The corrected elevations start 10/15/07.
feet TOC - feet below top of inner casing
3. *Monitor wells MW-3, MW-4, MW-6, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17 were professionally surveyed following installation of MW-13 through MW-17. The corrected elevations start 1/28/11.

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-1	11/14/05	Well was damaged - not sampled						
	12/08/04	32.2	<1	3.1	<3	14.7	<1	<2
	07/07/04	<1	<1	<1	<3	13.8	<1	<2
	04/09/04	36.5	<1	1.2	3.3	17.4	<1	2.6
	12/04/03	29.1	3.2	10.2	5.5	64.1	1.5	<2
	09/16/03	7.6	6.7	22.0	73.1	5.0	5.2	13.4
	12/04/02	898	115	96	285	1,440	16	33
	09/16/02	118	22	41	129	187	9.2	18
	05/15/02	30	12	40	86	43	9.2	14
	02/18/02	20	3.9	2.5	19	45	5.4	4.0
	11/26/01	35	16	12	19	26	3.3	2.3
	07/24/01	80	8.6	124	32	163	19	2.5
	08/24/00	149	7.9	255	36	474	32	7.6
MW-2	01/28/11	MW-2 was abandoned in September 2010						
	12/20/10							
	08/27/10	<1	<1	<1	<3	<1	<1	<2
	06/25/10	<1	<1	<1	<3	1.1	<1	<2
	03/25/10	<1	<1	<1	<3	5.6	<1	<2
	11/05/09	<1	2	<1	<3	<1	<1	<2
	08/17/09	<1	2	<1	4	2.8	<1	3
	06/05/09	<1	<1	<1	<3	2.8	<1	<1
	03/24/09	<1	<1	<1	<3	<1	<1	<1
	12/18/08	<1	<1	<1	<3	<1	<1	<1
	09/30/08	<1	<1	<1	<3	<1	<1	<1
	04/15/08	<1	<1	<1	<3	1	<1	<1
	01/14/08	<1	<1	<1	<3	10	<1	<1
	10/15/07	<1	<1	<1	<3	<1	<1	<1
	05/14/07	<1	<1	<1	<3	<1	<1	<1
	05/12/06	<1	<1	<1	<3	<1	<1	<1
	11/14/05	<1	<1	<1	<3	<1	<1	<1
	02/18/02	<1	<1	<1	<3	<1	<1	<2
	11/26/01	<1	<1	<1	<3	1.3	<1	<2
	07/24/01	<1	<1	<1	<3	93	<1	<2
	08/23/00	<1	<1	<1	<3	<1	<1	<2

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-3	01/12/12	<1	<1	<1	<3	1.3	<1	<2
	11/09/11	<1	<1	<1	<3	<1	<1	<2
	07/15/11	<1	6.4	<1	<3	<1	<1	<2
	05/09/11	<1	<1	<1	<3	<1	<1	<2
	01/28/11	MW-3 was buried beneath a mound of snow.						
	12/20/10	<1	<1	<1	<3	<1	<1	<2
	08/27/10	<1	<1	<1	<3	50.9	<1	<2
	06/25/10	3	<1	<1	<3	43.1	<1	<2
	03/25/10	<1	6.2	<1	<3	1.3	<1	<2
	11/05/09	<1	<1	<1	<3	6.4	<1	<2
	08/17/09	32.2	5.4	7	11.2	26.1	5.7	6.4
	06/05/09	<1	<1	<1	<3	<1	<1	<1
	03/24/09	55.9	3.6	14.8	8.8	32.8	5.4	4.8
	12/18/08	<1	<1	<1	<3	<1	<1	<1
	09/30/08	20	<3	<1	<3	52	1.1	<1
	04/15/08	10	<1	<1	<3	20	<1	<1
	01/04/08	<1	<1	<1	<3	<1	<1	<1
	10/15/07	360	11.0	50	21	160	7.8	15.0
	05/14/07	210	6.7	60	26	53	7.9	7.3
	05/12/06	38	1.3	7.5	6.5	17	1.9	3.2
	11/14/05	1.6	<1	<1	<3	61	<1	<1
	07/06/05	51.4	19.6	3.8	38.3	140	<1	9.1
	03/24/05	<1	<1	<1	<3	28.2	<1	<2
	12/08/04	39.1	1.0	5.5	3.9	63.7	3.2	2.3
	07/07/04	26.2	3.1	3.9	19.6	33.8	2.2	3.8
	04/09/04	7.7	<1	1.0	5.4	12.0	<1	<2
	12/04/03	35.2	6.2	26.7	26.6	52.4	7.1	8.8
	02/18/02	127	34	17	407	768	2.2	9.2
	11/26/01	<1	<1	<1	<3	<1	<1	<2
	07/24/01	485	152	390	1,490	1,950	35	155

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-4	01/12/12	<1	<1	<1	<3	3.1	<1	<2
	11/09/11	<1	<1	<1	<3	1.7	<1	<2
	07/15/11	<1	<1	<1	<3	3.3	<1	<2
	05/09/11	<1	<1	<1	<3	2.8	<1	<2
	01/28/11	<1	<1	<1	<3	<1	<1	<2
	12/20/10	<1	<1	<1	<3	3.2	<1	<2
	08/27/10	<1	<1	<1	<3	3.7	<1	<2
	06/25/10	<1	<1	<1	<3	4.5	<1	<2
	03/25/10	<1	<1	<1	<3	3.1	<1	<2
	11/05/09	<1	<1	<1	<3	2.3	<1	<2
	08/17/09	<1	1.2	<1	<3	3.8	<1	<2
	06/05/09	<1	<1	<1	<3	4.8	<1	<1
	03/24/09	7.5	1.1	5.5	6.4	4.4	<1	2.2
	12/18/08	<1	<1	<1	<3	4.4	<1	<1
	09/30/08	<1	<1	<1	<3	5.3	<1	<1
	04/15/08	<1	<1	<1	<3	1.4	<1	<1
	01/14/08	<1	<1	<1	<3	1.7	<1	<1
	10/15/07	<1	<1	<1	<3	2.3	<1	<1
	05/14/07	<1	<1	<1	<3	1.7	<1	<1
	05/12/06	<1	<1	<1	<3	4.7	<1	<1
	11/14/05	<1	<1	<1	<3	7.6	<1	<1
	07/26/05	<1	10.4	2.1	15.6	3.9	<1	<2
	03/24/05	3.5	30.8	7.5	42	6.7	<1	3.3
	12/08/04	<1	<1	<1	<3	6.8	<1	<2
	07/07/04	<1	<1	<1	<3	5.6	<1	<2
	04/09/04	<1	<1	<1	<3	7.4	<1	<2
	12/04/03	<1	<1	<1	<3	<1	<1	<2
	09/16/03	<1	<1	<1	<3	3.1	<1	<2
	04/29/03	<1	<1	<1	<3	4.3	<1	<2
	12/04/02	<1	<1	<1	<3	<1	<1	<2
	09/16/02	<1	<1	<1	<3	8.8	<1	<2
	05/15/02	<1	<1	<1	<3	13	<1	<2
	02/18/02	<1	<1	<1	<3	4.0	<1	<2
	11/26/01	<1	<1	<1	<3	6.7	<1	<2
	07/23/01	<1	<1	<1	<3	14	<1	<2
	08/23/00	<1	<1	<1	<3	11	<1	<2

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-5	11/14/05	MW-5 was paved over.						
	04/29/03	<1	<1	<1	<3	<1	<1	<2
	12/04/02	<1	<1	<1	<3	<1	<1	<2
	09/16/02	<1	<1	<1	<3	<1	<1	<2
	05/15/02	<1	<1	<1	<3	<1	<1	<2
	02/18/02	<1	<1	<1	<3	<1	<1	<2
	11/26/01	<1	<1	<1	<3	<1	<1	<2
	07/23/01	<1	<1	<1	<3	<1	<1	<2
	08/23/00	<1	<1	<1	<3	<1	<1	<2

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-6	01/12/12	<1	<1	<1	<3	<1	<1	<2
	11/08/11	<1	<1	<1	<3	<1	<1	<2
	07/15/11	<1	<1	<1	<3	<1	<1	<2
	05/09/11	<1	<1	<1	<3	<1	<1	<2
	01/28/11	<1	<1	<1	<3	<1	<1	<2
	12/20/10	<1	<1	<1	<3	<1	<1	<2
	08/27/10	<1	<1	<1	<3	<1	<1	<2
	06/25/10	<1	<1	<1	<3	<1	<1	<2
	03/25/10	<1	<1	<1	<3	<1	<1	<2
	11/05/09	<1	<1	<1	<3	<1	<1	<2
	08/17/09	<1	<1	<1	<3	<1	<1	<2
	06/05/09	<1	<1	<1	<3	<1	<1	<1
	03/24/09	<1	<1	<1	<3	<1	<1	<1
	12/18/08	<1	<1	<1	<3	<1	<1	<1
	09/30/08	<1	<1	<1	<3	<1	<1	<1
	04/15/08	<1	<1	<1	<3	<1	<1	<1
	01/14/08	<1	<1	<1	<3	<1	<1	<1
	10/15/07	<1	<1	<1	<3	<1	<1	<1
	05/14/07	<1	<1	<1	<3	<1	<1	<1
	05/12/06	<1	<1	<1	<3	<1	<1	<1
	11/14/05	<1	<1	<1	<3	<1	<1	<1
	07/06/05	<1	<1	<1	<3	<1	<1	<2
	03/24/05	<1	1.5	<1	<3	<1	<1	<2
	12/08/04	<1	<1	<1	<3	<1	<1	<2
	07/07/04	<1	<1	<1	<3	<1	<1	<2
	04/09/04	<1	<1	<1	<3	<1	<1	<2
	12/04/03	<1	<1	<1	<3	<1	<1	<2
	04/29/03	<1	<1	<1	<3	<1	<1	<2
	12/04/02	<1	<1	<1	<3	2.2	<1	<2
	09/16/02	<1	<1	<1	<3	<1	<1	<2
	05/15/02	<1	<1	<1	<3	<1	<1	<2
	02/18/02	<1	<1	<1	<3	<1	<1	<2
	11/26/01	<1	<1	<1	<3	<1	<1	<2
	07/23/01	<1	<1	<1	<3	<1	<1	<2
	08/23/00	<1	<1	<1	<3	<1	<1	<2

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-7	01/12/12	<1	<1	<1	<3	6.1	<1	<2
	11/09/11	<1	1.4	<1	<3	5.5	<1	<2
	07/15/11	<1	2.7	<1	<3	6.9	<1	<2
	05/09/11	<1	2	<1	<3	7.3	<1	<2
	01/28/11	<1	<1	<1	<3	6	<1	<2
	12/20/10	<1	<1	<1	<3	5	<1	2.3
	08/27/10	<1	<1	<1	<3	<1	<1	<2
	06/25/10	<1	1.6	<1	<3	<1	<1	<2
	03/25/10	<1	<1	<1	<3	<1	<1	<2
	11/05/09	<1	<1	<1	<3	<1	<1	<2
	08/17/09	<1	1.8	<1	<3	<1	<1	<2
	06/05/09	<1	<1	<1	<3	<1	<1	<1
	03/24/09	<1	<1	<1	<3	<1	<1	<1
	12/18/08	<1	<1	<1	<3	<1	<1	<1
	09/30/08	<1	<1	<1	<3	<1	<1	<1
	04/15/08	<1	<1	<1	<3	<1	<1	<1
	01/14/08	<1	<1	<1	<3	<1	<1	<1
	10/15/07	<1	1.9	<1	<3	<1	<1	<1
	05/14/07	<1	<1	<1	<3	1.1	<1	<1
	05/12/06	2.4	2.2	<1	17	18	<1	<1
MW-8	01/12/12	<1	<1	<1	<3	<1	<1	<2
	11/09/11	<1	1.1	<1	<3	<1	<1	<2
	07/15/11	<1	1.4	<1	<3	<1	<1	<2
	05/09/11	<1	1	<1	<3	<1	<1	<2
	01/28/11	<1	<1	<1	<3	<1	<1	<2
	12/20/10	<1	<1	<1	<3	<1	<1	<2
	08/27/10	<1	<1	<1	<3	1.7	<1	<2
	06/25/10	<1	<1	<1	<3	<1	<1	<2
	03/25/10	<1	<1	<1	<3	<1	<1	<2
	11/05/09	<1	1	<1	<3	<1	<1	<2
	08/17/09	<1	1	<1	<3	<1	<1	<2
	06/05/09	<1	<1	<1	<3	<1	<1	<1
	03/24/09	<1	<1	<1	<3	<1	<1	<1
	12/18/08	<1	<1	<1	<3	<1	<1	<1
	09/30/08	<1	<1	<1	<3	<1	<1	<1
	04/15/08	<1	<1	<1	<3	<1	<1	<1
	01/14/08	<1	<1	<1	<3	<1	<1	<1
	10/15/07	<1	<1	<1	<3	<1	<1	<1
	05/14/07	<1	1.9	<1	<3	<1	<1	<1
	05/12/06	120	93	66	250	29	8.4	15

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-9	12/20/10	MW-9 was abandoned in September 2010						
	08/27/10	<1	<1	<1	<3	3.7	<1	<2
	06/25/10	<1	<1	<1	<3	7.5	<1	<2
	03/25/10	<1	<1	<1	<3	2.8	<1	<2
	11/05/09	<1	<1	<1	<3	8	<1	<2
	08/17/09	1.7	2.3	<1	3.3	3.7	<1	<2
	06/05/09	<1	<1	<1	<3	2.1	<1	<1
	03/24/09	<1	<1	<1	<3	10.1	<1	<1
	12/18/08	<1	<1	<1	<3	7.1	<1	2.7
	09/30/08	<1	<1	<1	<3	8.3	<1	<1
	04/15/08	<1	<1	<1	<3	3.4	<1	<1
	01/14/08	<1	<1	<1	<3	<1	<1	<1
	10/15/07	<1	<1	1.4	<3	10.0	<1	<1
	05/14/07	<1	<1	1.2	<3	3.6	<1	<1
	05/12/06	44	10	150	520	20	36	80
MW-10	01/12/12	<1	2.3	<1	<3	10.6	<1	<2
	11/09/11	<1	<1	<1	<3	7.5	<1	<2
	07/15/11	1.4	3.7	<1	<3	6.7	<1	<2
	05/09/11	2.3	5.5	<1	3.5	6.6	<1	<2
	01/28/11	<1	1	<1	<3	<1	<1	<2
	12/20/10	<1	1.2	<1	<3	<1	<1	<2
	08/27/10	1.8	4.9	<1	3.8	12.8	<1	<2
	06/25/10	1.5	3	<1	<3	29.4	<1	<2
	03/25/10	2.2	4.8	<1	<3	24	<1	<2
	11/05/09	3.1	3.8	<1	3.3	3.4	<1	<2
	08/17/09	2.9	5.6	<1	4.8	7.7	1.4	<2
	06/05/09	5	5	1.4	4.8	33.6	6.4	4.1
	03/24/09	3.8	3.4	3.5	3.1	15.2	13.9	<1
	12/1//08	9.8	6.2	14.2	36.3	11.1	59.8	10.4
	09/30/08	4.9	3.2	12	8.6	15	24	<1
	04/15/08	11	2	71	140	21	54	32
	01/14/08	33	14	220	780	11	130	190
	10/15/07	380	200	1200	3700	70	220	800

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-11	01/12/12	529	31.6	256	132	233	24.8	70.3
	11/09/11	929	46.1	464	219	295	45.3	150
	07/15/11	404	20.2	159	98.4	129	18.2	43.8
	05/09/11	453	20.7	168	107	202	18.4	41.3
	01/28/11	1,370	72.8	548	305	447	57.7	152
	12/20/10	764	38.7	304	153	236	37.5	91.5
	08/27/10	611	28.8	249	178	270	28.7	72.7
	06/25/10	310	16	140	93.7	168	17.3	21.6
	03/25/10	782	42.3		272	449	42.5	113
	11/05/09	921	53.8	457	347	334	50.2	148
	08/17/09	676	37.6	304	321	265	35.4	90.7
	06/05/09	723	34.5	221	254	186	27.6	88.1
	03/24/09	629	40.9	162	238	255	20	63
	12/18/08	480	44.3	341	395	153	30.9	76.4
	09/30/08	730	42	290	300	270	31	97
	04/15/08	750	82	470	780	380	59	160
	01/14/08	580	65	120	450	340	12	62
	10/15/07	1200	140	710	1300	460	120	230

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-12	01/12/12	44.7	<1	<1	<3	298	1.4	<2
	11/08/11	120	1.7	<1	<3	216	10.9	3.7
	07/15/11	76.1	1.2	<1	<3	217	5	4.6
	05/09/11	93.3	1.7	<1	<3	302	6.5	2.5
	01/28/11	89.2	1.2	<1	<3	314	<1	2.2
	12/20/10	14.6	<1	<1	<3	181	<1	<2
	08/27/10	39.7	1.2	<1	3.8	361	<1	<2
	06/25/10	5	<1	<1	<3	159	<1	<2
	03/25/10	<1	1.2	<1	<3	144	<1	<2
	11/05/09	1.7	2	<1	<3	89	<1	<2
	08/17/09	<1	<1	<1	<3	114	<1	<2
	06/05/09	1.6	1.8	1.4	<3	52.5	<1	2.9
	03/24/09	4.3	<1	6.8	5.6	70.9	1.9	6.3
	12/18/08	3.8	3.2	7.8	8.8	31.7	2.5	5.6
	09/30/08	45	17	210	420	75	79	180
MW-13	01/12/12	<1	<1	<1	<3	125	<1	<2
	11/08/11	<1	<1	<1	<3	74.1	<1	<2
	07/15/11	<1	<1	<1	<3	75.3	<1	<2
	05/09/11	<1	<1	<1	<3	47.8	<1	<2
	01/28/11	<1	<1	<1	<3	1.8	<1	<2
MW-14S	01/12/12	166	8.2	81	32.9	83.9	14.6	17.2
	11/08/11	278	12.9	125	59.1	91.5	20.6	43.6
	07/15/11	324	18.6	137	76.7	125	24.7	59.5
	05/09/11	269	9.8	52.3	31.7	93.5	13.8	28.3
	01/28/11	36.5	2.3	18.6	9.5	22.1	6.4	5.8

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
MW-15S	01/12/12	70.6	4.9	17	17.7	31.2	2.3	6.2
	11/08/11	58	3.1	9.4	7.9	17.5	1.5	6.1
	07/15/11	1	<1	<1	<3	1.8	<1	4.1
	05/09/11	5.4	<1	<1	<3	2.4	<1	<2
	01/28/11	14.8	1.4	1.2	3	7.8	<1	<2
MW-16	01/12/12	<1	<1	<1	<3	<1	<1	<2
	11/08/11	<1	<1	<1	<3	<1	<1	<2
	07/15/11	<1	<1	<1	<3	<1	<1	<2
	05/09/11	<1	<1	<1	<3	<1	<1	<2
	01/28/11	<1	4.3	1	14.8	<1	<1	<2
MW-17	01/12/12	<1	<1	<1	<3	<1	<1	4
	11/08/11	<1	<1	<1	<3	<1	<1	4
	07/15/11	<1	2.8	<1	9.8	<1	<1	<2
	05/09/11	<1	5	<1	5.5	<1	<1	<2
	01/28/11	<1	3.5	1	5.4	<1	<1	<2
RW-1 Recovery well	12/20/10	RW-1 was properly abandoned in September 2010						
	11/14/05	<1	<1	<1	<3	1.2	<1	<1
	07/06/05	<1	<1	<1	<3	<1	<1	<2
	03/24/05	14	78.4	14.4	87.2	1.9	<1	3.8
	12/08/04	<1	<1	<1	<3	<1	<1	<2
	07/07/04	10.7	<1	<1	<3	36.7	<1	<2
	04/09/04	<1	<1	<1	<3	<1	<1	<2
	12/04/03	1.8	<1	<1	<3	105	<1	<2
	02/18/02	<1	<1	<1	<3	<1	<1	<2
	11/26/01	<1	<1	<1	<3	1.1	<1	<2
	07/23/01	<1	<1	<1	<3	2.5	<1	<2
	08/24/00	<1	<1	<1	<3	1.8	<1	<2
RW-2 Recovery well		RW-2 was properly abandoned in September 2010						
	11/14/05	6.1	<1	<1	<3	7.9	<1	1.1
	07/06/05	324	4.8	15.7	6.6	174	2.9	10.3
	03/24/05	<1	2.8	<1	5.2	10.8	<1	<2
	12/08/04	76.8	<1	<1	<3	133	<1	<2
	07/07/04	1.9	<1	<1	<3	73.7	<1	<2
	12/04/03	1.8	<1	<1	<3	105	<1	<2
	12/04/02	95	10	24	96	195	4.6	11
	09/16/02	66	7.8	14	66	488	<5	<10
	05/15/02	320	<10	15	93	2,380	<10	43
	02/18/02	<1	<1	<1	<3	7.6	<1	<2
	11/26/01	2.0	<1	2.2	37	39	1.2	19
	07/24/01	30	2.8	6.8	33	714	<1	<2
	08/24/00	53	<5	23	22	1,930	<5	<10

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

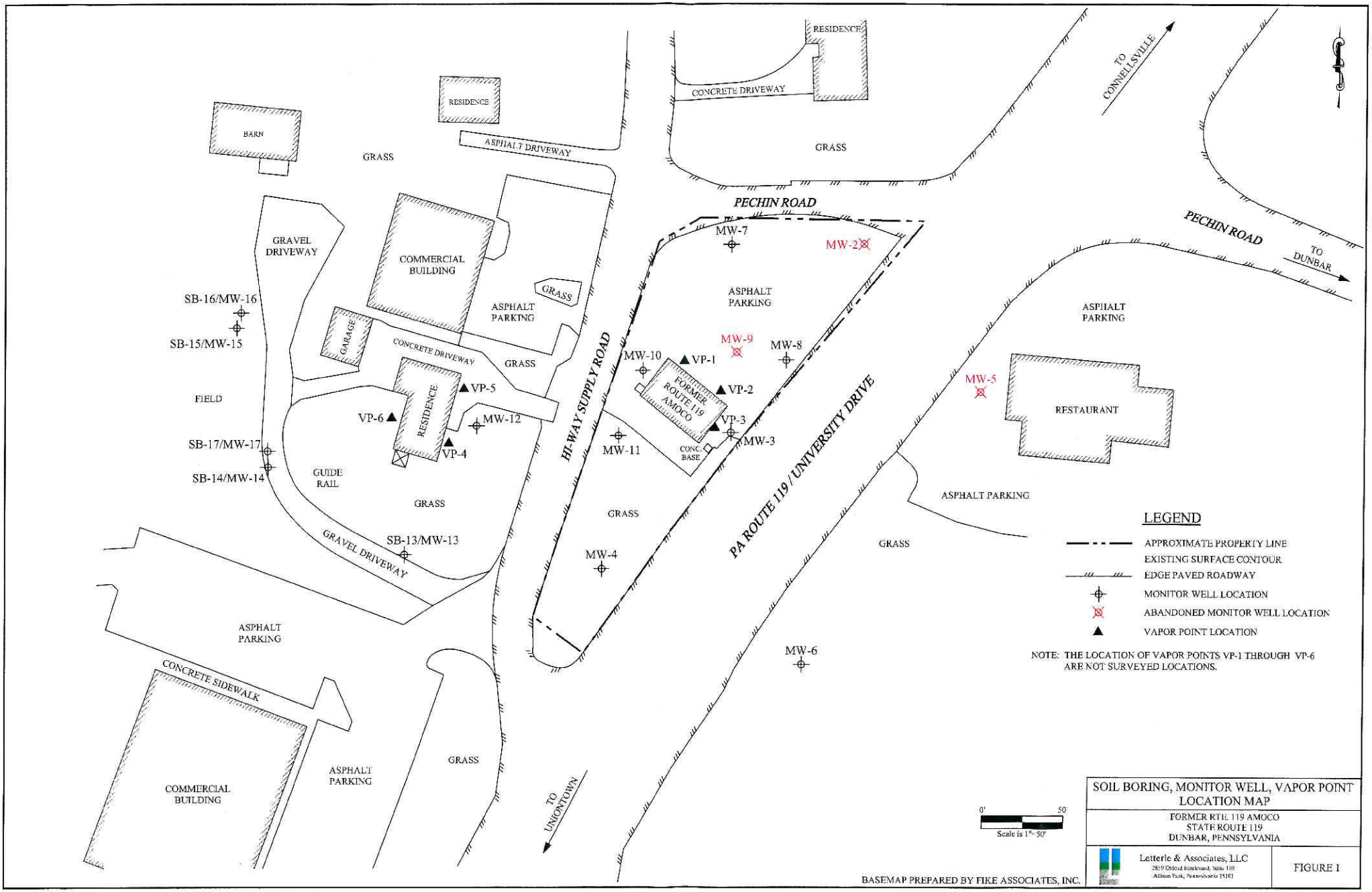
Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
DW-1	12/10/10	DW-1 was properly abandoned in September 2010						
	11/14/05	Well was paved over - not sampled.						
	07/07/04	<1	<1	<1	<3	<1	<1	<2
	04/09/04	<1	<1	<1	<3	<1	<1	<2
	12/04/03	<1	<1	<1	<3	<1	<1	<2
	09/16/02	<1	<1	<1	<3	<1	<1	<2
	05/15/02	<1	<1	2.5	<3	<1	<1	<2
	02/18/02	2.2	1.6	7.0	3.4	<1	<1	<2
	11/26/01	2.9	<1	<1	<3	<1	<1	2.0
	08/28/01	3.2	3.9	<1	14	<1	<1	2.0
SVE-1	12/10/10	SVE-1 was properly abandoned in September 2010						
	11/14/05	Well was not sampled.						
	03/24/05	<1	<1	<1	<3	<1	<1	<2
	12/08/04	324	16.3	50.0	49.7	131	4.3	12.9
	04/09/04	431	16.6	27.0	78.5	203	8.8	26.6
	12/04/03	114	7.2	18.9	11.0	70.1	1.6	3.4
	09/16/03	4.2	2.5	<1	21.8	2.5	2.3	<2
SVE-2	12/10/10	SVE-2 was properly abandoned in September 2010						
	11/14/05	57	1.5	<1	<3	45	1.3	<1
	07/06/05	622	10.5	180	36.7	225	9.4	35.4
	03/24/05	1.3	3.1	1.5	7.0	<1	<1	2.2
	12/08/04	304	22.6	63.8	82.6	113	4.4	15.0
	07/07/04	41.4	3.2	2.5	10.0	53.6	<1	<2
	04/09/04	356	41.6	42.6	126	279	7.6	19.4
	12/04/03	185	66.2	23.4	135	321	2.3	7.7
	09/16/03	9.1	3.6	<1	21.7	4.7	2.3	<2
	04/29/03	263	16.7	54.7	55.5	403	5.5	17.2
	12/04/02	1,490	243	144	453	745	<20	48
	09/16/02	719	82	65	290	1,190	<20	41
	05/15/02	850	196	182	783	2,320	27	60
	02/18/02	575	119	47	532	9,400	3.1	15
	11/26/01	<1	<1	<1	<3	6.2	<1	<2
	07/24/01	251	57	117	325	1,740	17	27
	08/24/00	3,890	1,840	766	7,750	28,900	60	268

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL DATA
Former Route 119 Amoco
Dunbar, Pennsylvania

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Cumene (µg/l)	Naphthalene (µg/l)
SVE-3	12/10/10	SVE-3 was properly abandoned in September 2010						
	11/14/05	Well was not sampled.						
	03/24/05	<1	1.4	<1	3.6	<1	<1	<2
	12/08/04	579	58.0	136	226	190	10.9	38.6
	07/07/04	196	9.4	6.1	12.6	258	<1	2.4
	04/09/04	630	77.8	145	239	318	15.4	53.2
	12/04/03	200	18.6	43.8	50.6	173	3.9	14.8
	09/16/03	31.5	4.5	17.3	29.4	4.1	3.1	<2
	04/29/03	258	29.3	89.6	102	366	8.8	32.3
	12/04/02	794	166	107	337	364	14	36
	09/16/02	1,990	207	216	847	3,480	22	146
	05/15/02	414	26	60	200	51	14	75
	02/18/02	311	11	11	106	109	3.5	30
	11/26/01	781	<20	<20	135	4,770	<20	<40
	08/24/00	671	47	416	547	140	26	138
AS-1	12/10/10	AS-1 was properly abandoned in September 2010						
Air Sparge well	11/14/05	1	<1	<1	<3	6.3	<1	2.4
	08/23/00	Well was not sampled.						
AS-2	12/10/10	AS-2 was properly abandoned in September 2010						
Air Sparge well	11/14/05	<1	<1	<1	<3	130	<1	<1
	07/06/05	<1	<1	<1	<3	155	<1	<2
	07/07/04	7.6	1.1	<1	<3	85.4	<1	<2
	08/24/00	<1	<1	<1	<3	55.0	<1	<2
Medium Specific Concentrations*		**5**	**1,000**	**700**	**10,000**	**20**	**840**	**100**

Notes:
Shaded cells indicate concentrations in excess of the PADEP Statewide Health Standards.
* The Medium Specific Concentrations (MSCs) listed above are the PADEP Statewide Health Standards for residential used aquifers.
µg/l - micrograms per liter
MTBE - methyl tertiary butyl ether

FIGURES

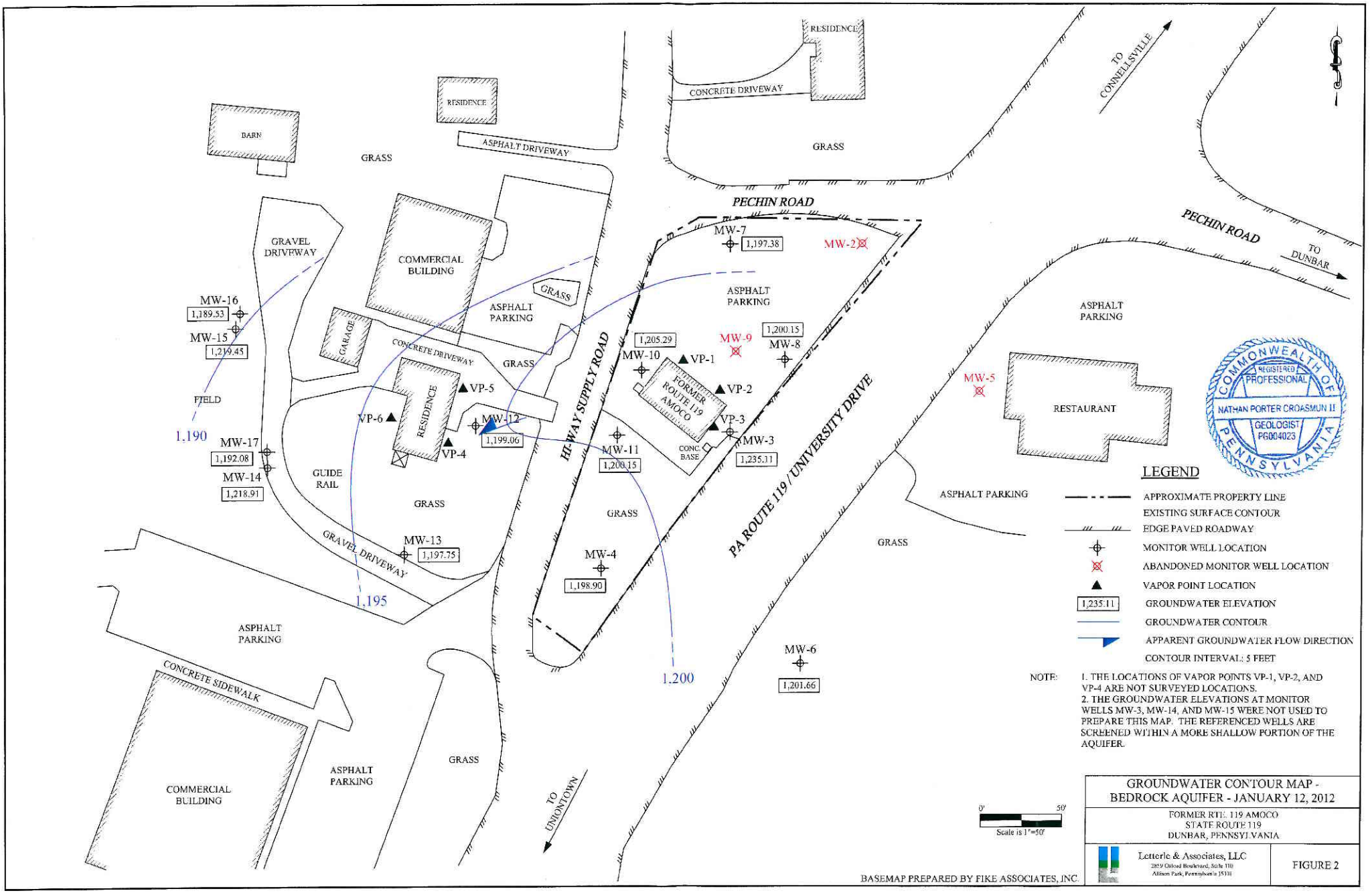


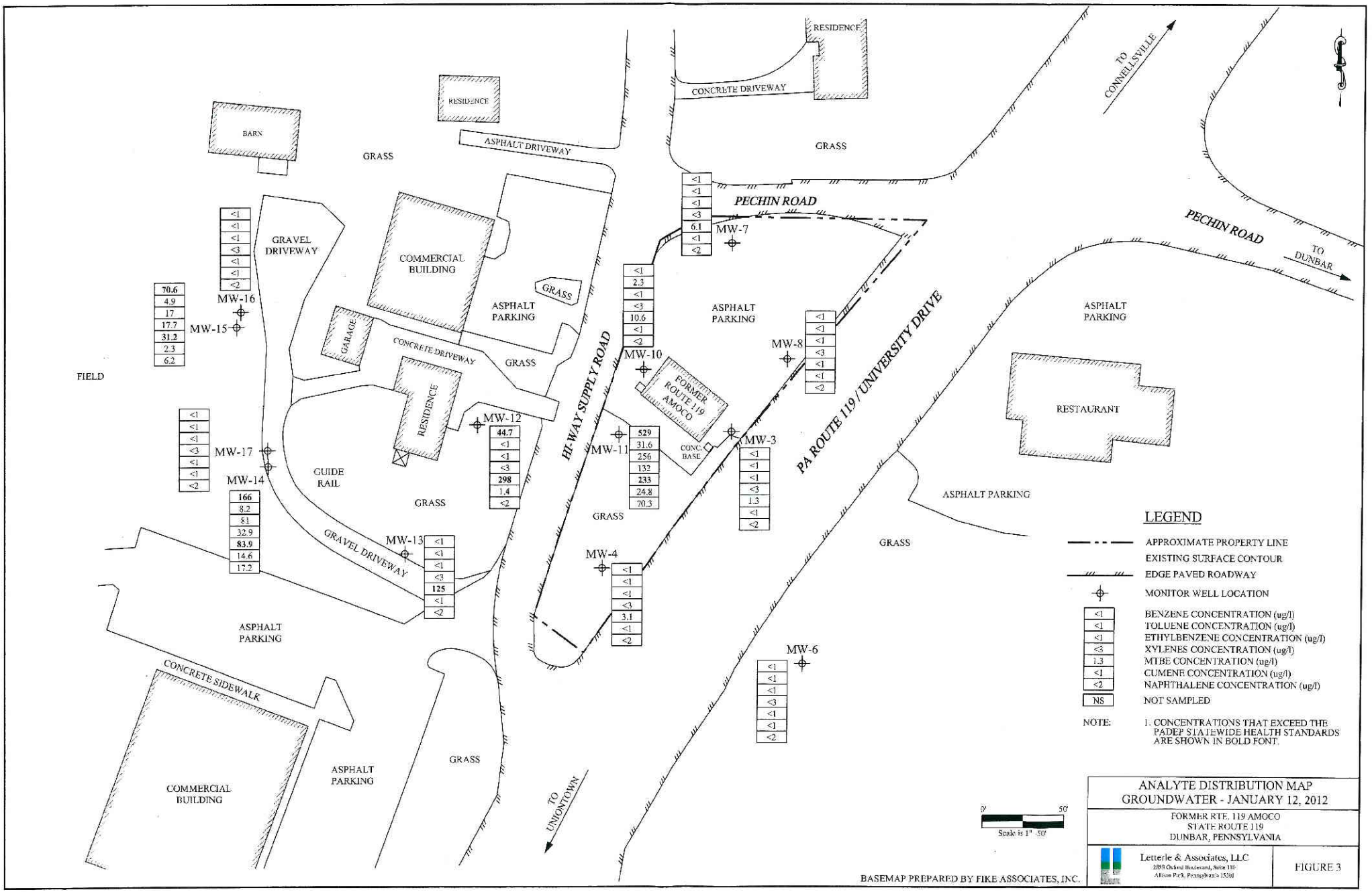
SOIL BORING, MONITOR WELL, VAPOR POINT LOCATION MAP

FORMER RTE. 119 AMOCO
STATE ROUTE 119
DUNBAR, PENNSYLVANIA

Letterle & Associates, LLC
2859 Oxford Boulevard, Suite 110
Allison Park, Pennsylvania 15101

FIGURE 1


RESIDENCE
CONCRETE DRIVEWAY
GRASS
TO CONNELLSVILLE
BARN
RESIDENCE
ASPHALT DRIVEWAY
GRASS
PECHIN ROAD
MW-7
1,197.38
MW-2
PECHIN ROAD
TO DUNBAR
GRAVEL DRIVEWAY
COMMERCIAL BUILDING
GRASS
ASPHALT PARKING
ASPHALT PARKING
MW-16
1,189.53
MW-15
1,219.45
GARAGE
CONCRETE DRIVEWAY
GRASS
1,205.29
MW-10
MW-9
1,200.15
MW-8
VP-1
VP-2
VP-3
VP-5
VP-6
RESIDENCE
MW-12
1,199.06
VP-4
FIELD
1,190
MW-17
1,192.08
MW-14
1,218.91
GUIDE RAIL
GRASS
MW-11
1,200.15
CONC BASE
MW-3
1,235.11
HEWAY SUPPLY ROAD
FORMER ROUTE 119 AMOCO
PA ROUTE 119 / UNIVERSITY DRIVE
MW-5
RESTAURANT
ASPHALT PARKING
GRAVEL DRIVEWAY
MW-13
1,197.75
1,195
GRASS
MW-4
1,198.90
GRASS
ASPHALT PARKING
1,200
MW-6
1,201.66
CONCRETE SIDEWALK
ASPHALT PARKING
COMMERCIAL BUILDING
GRASS
TO UNIONTOWN
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
NATHAN PORTER CROASMUN II
GEOLOGIST
PG004023
LEGEND
APPROXIMATE PROPERTY LINE
EXISTING SURFACE CONTOUR
EDGE PAVED ROADWAY
MONITOR WELL LOCATION
ABANDONED MONITOR WELL LOCATION
VAPOR POINT LOCATION
1,235.11 GROUNDWATER ELEVATION
GROUNDWATER CONTOUR
APPARENT GROUNDWATER FLOW DIRECTION
CONTOUR INTERVAL: 5 FEET
NOTE: 1. THE LOCATIONS OF VAPOR POINTS VP-1, VP-2, AND VP-4 ARE NOT SURVEYED LOCATIONS.
2. THE GROUNDWATER ELEVATIONS AT MONITOR WELLS MW-3, MW-14, AND MW-15 WERE NOT USED TO PREPARE THIS MAP. THE REFERENCED WELLS ARE SCREENED WITHIN A MORE SHALLOW PORTION OF THE AQUIFER.
0' 50'
Scale is 1"=50'
BASEMAP PREPARED BY FIKE ASSOCIATES, INC.
GROUNDWATER CONTOUR MAP - BEDROCK AQUIFER - JANUARY 12, 2012
FORMER RTE. 119 AMOCO
STATE ROUTE 119
DUNBAR, PENNSYLVANIA
Letterle & Associates, LLC
2859 Oxford Boulevard, Suite 110
Allison Park, Pennsylvania 15101
FIGURE 2



<1	
<1	
<1	
<3	
6.1	
<1	
<2	

<1	
2.3	
<1	
<3	
10.6	
<1	
<2	

<1	
<1	
<1	
<3	
<1	
<1	
<2	

70.6	
4.9	
17	
17.7	
31.2	
2.3	
6.2	

<1	
<1	
<1	
<3	
<1	
<1	
<2	

44.7	
<1	
<1	
<3	
298	
1.4	
<2	

529	
31.6	
256	
132	
233	
24.8	
70.3	

<1	
<1	
<1	
<3	
1.3	
<1	
<2	

166	
8.2	
81	
32.9	
83.9	
14.6	
17.2	

<1	
<1	
<1	
<3	
125	
<1	
<2	

<1	
<1	
<1	
<3	
3.1	
<1	
<2	

<1	
<1	
<1	
<3	
<1	
<1	
<2	

LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING SURFACE CONTOUR
- EDGE PAVED ROADWAY
- MONITOR WELL LOCATION

<1	BENZENE CONCENTRATION (ug/l)
<1	TOLUENE CONCENTRATION (ug/l)
<1	ETHYLBENZENE CONCENTRATION (ug/l)
<3	XYLENES CONCENTRATION (ug/l)
1.3	MTBE CONCENTRATION (ug/l)
<1	CUMENE CONCENTRATION (ug/l)
<2	NAPHTHALENE CONCENTRATION (ug/l)
NS	NOT SAMPLED

NOTE: 1. CONCENTRATIONS THAT EXCEED THE PADEP STATEWIDE HEALTH STANDARDS ARE SHOWN IN BOLD FONT.

ANALYTE DISTRIBUTION MAP
GROUNDWATER - JANUARY 12, 2012

FORMER RTE. 119 AMOCO
STATE ROUTE 119
DUNBAR, PENNSYLVANIA

Letterle & Associates, LLC
2858 Oxford Boulevard, Suite 110
Allison Park, Pennsylvania 15101

FIGURE 3

APPENDICES

APPENDIX A

Soil Boring Logs and Vapor Monitor Point Construction Details

VAPOR POINT COMPLETION LOG

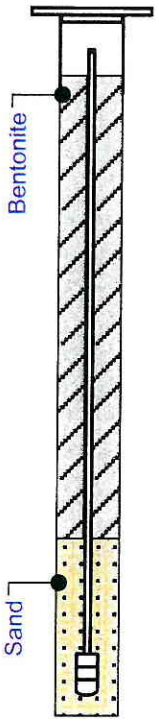
BORING NUMBER : SB-18/VP-5
SHEET 1 of 1

PROJECT: Former Route 119 Amoco
PROJECT NUMBER: 013
DRILLING METHOD: Geoprobe
DRILLING CONTRACTOR: Letterle Leasing, LLC
LOGGED BY: Jared Thorn

POINT TYPE: PVC
DATE: 2/7/12
SAMPLE TYPE(S): Hand Auger
TOTAL DEPTH: 8 feet
LOCATION: Dunbar, PA

DEPTH BELOW SURFACE (FT)	SAMPLE ID	RECOVERY (in.)	VAPOR (ppm)	USCS SYMBOL	CLASSIFICATION OF MATERIAL
0					Ground Surface
0					**Topsoil**
					Limestone Gravel;
	1	96	0.0		**Light Brown and Light Gray Silty Clay;** slightly moist.
2	2		0.0		
4	3		1.0		
6	4		0.5		**Gray Clay and Silt;** with abundant highly weathered shale fragments, dry.
8					EXTENT OF BOREHOLE
10					

WELL CONSTRUCTION



DRILLED BY: Jared Thorn
CASING LENGTH: 7.3 feet
SCREEN LENGTH: 0.6 feet

SLOT SIZE: 0.010-inch
HOLE SIZE: 2.125-inch
CASING SIZE: .25-inch polyethylene

SAND SIZE: 20/40 sand
MESH SIZE: 0.010-inch

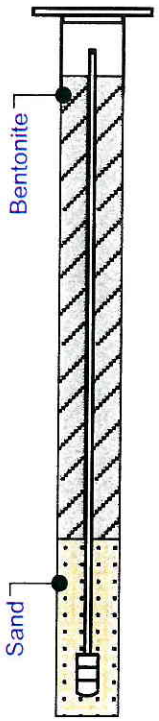
VAPOR POINT COMPLETION LOG

BORING NUMBER : SB-19/VP-6
SHEET 1 of 1

PROJECT: Former Route 119 Amoco
PROJECT NUMBER: 013
DRILLING METHOD: Geoprobe
DRILLING CONTRACTOR: Letterle Leasing, LLC
LOGGED BY: Jared Thorn

POINT TYPE: PVC
DATE: 2/7/12
SAMPLE TYPE(S): Hand Auger
TOTAL DEPTH: 8 feet
LOCATION: Dunbar, PA

DEPTH BELOW SURFACE (FT)	SAMPLE ID	RECOVERY (in.)	VAPOR (ppm)	USCS SYMBOL	CLASSIFICATION OF MATERIAL	WELL CONSTRUCTION
ft / m					Ground Surface	
0 / 0					Topsoil	
	1	96	0.0		Limestone Gravel;	
2	2		0.1		Light Brown and Light Gray Silty Clay; slightly moist.	
4	3		0.9		Dark Gray Clay and Silt; with abundant highly weathered shale fragments, dry.	
6 / 2	4		2.5		Light Gray Clay and Silt; with abundant gray shale fragments	
8					EXTENT OF BOREHOLE	
10						



DRILLED BY: Jared Thorn
CASING LENGTH: 7.3 feet
SCREEN LENGTH: 0.6 feet

SLOT SIZE: 0.010-inch
HOLE SIZE: 2.125-inch
CASING SIZE: .25-inch polyethylene

SAND SIZE: 20/40 sand
MESH SIZE: 0.010-inch

APPENDIX B

Laboratory Analytical Reports

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 23, 2011

Mr. Nate Croasmun
Letterle & Associates
2859 Oxford Boulevard
Suite 110
Allison Park, PA 15101

RE: Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Dear Mr. Croasmun:
Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2011. 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,

Rachel D Christner

Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

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 SUMMARY

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3046399001	MW-3	Water	05/09/11 10:10	05/10/11 13:10
3046399002	MW-4	Water	05/09/11 11:05	05/10/11 13:10
3046399003	MW-6	Water	05/09/11 10:35	05/10/11 13:10
3046399004	MW-7	Water	05/09/11 09:40	05/10/11 13:10
3046399005	MW-8	Water	05/09/11 10:10	05/10/11 13:10
3046399006	MW-10	Water	05/09/11 10:30	05/10/11 13:10
3046399007	MW-11	Water	05/09/11 10:55	05/10/11 13:10
3046399008	MW-12	Water	05/09/11 11:45	05/10/11 13:10
3046399009	MW-13	Water	05/09/11 11:55	05/10/11 13:10
3046399010	MW-14S	Water	05/09/11 12:10	05/10/11 13:10
3046399011	MW-15S	Water	05/09/11 12:55	05/10/11 13:10
3046399012	MW-16	Water	05/09/11 12:50	05/10/11 13:10
3046399013	MW-17	Water	05/09/11 12:35	05/10/11 13:10
3046399014	Duplicate (MW-11)	Water	05/09/11 10:55	05/10/11 13:10
3046399015	Trip Blank	Water	05/09/11 00:01	05/10/11 13:10

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SAMPLE ANALYTE COUNT

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3046399001	**MW-3**	EPA 8260	JAS	10	PASI-PA
3046399002	**MW-4**	EPA 8260	JAS	10	PASI-PA
3046399003	**MW-6**	EPA 8260	JAS	10	PASI-PA
3046399004	**MW-7**	EPA 8260	JAS	10	PASI-PA
3046399005	**MW-8**	EPA 8260	JAS	10	PASI-PA
3046399006	**MW-10**	EPA 8260	JAS	10	PASI-PA
3046399007	**MW-11**	EPA 8260	JAS	10	PASI-PA
3046399008	**MW-12**	EPA 8260	JAS	10	PASI-PA
3046399009	**MW-13**	EPA 8260	JAS	10	PASI-PA
3046399010	**MW-14S**	EPA 8260	JAS	10	PASI-PA
3046399011	**MW-15S**	EPA 8260	JAS	10	PASI-PA
3046399012	**MW-16**	EPA 8260	JAS	10	PASI-PA
3046399013	**MW-17**	EPA 8260	JAS	10	PASI-PA
3046399014	**Duplicate (MW-11)**	EPA 8260	JAS	10	PASI-PA
3046399015	**Trip Blank**	EPA 8260	JAS	10	PASI-PA

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-3 **Lab ID: 3046399001** Collected: 05/09/11 10:10 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 06:30	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 06:30	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 06:30	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		05/14/11 06:30	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 06:30	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 06:30	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 06:30	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		05/14/11 06:30	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		05/14/11 06:30	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		05/14/11 06:30	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-4 **Lab ID: 3046399002** Collected: 05/09/11 11:05 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 06:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 06:56	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 06:56	98-82-8	
Methyl-tert-butyl ether	**2.8**	ug/L	1.0	0.12	1		05/14/11 06:56	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 06:56	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 06:56	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 06:56	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		05/14/11 06:56	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		05/14/11 06:56	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		05/14/11 06:56	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-6 **Lab ID: 3046399003** Collected: 05/09/11 10:35 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 07:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 07:22	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 07:22	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		05/14/11 07:22	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 07:22	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 07:22	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 07:22	1330-20-7	
Toluene-d8 (S)	97	%	70-130		1		05/14/11 07:22	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/14/11 07:22	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		05/14/11 07:22	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-7 **Lab ID: 3046399004** Collected: 05/09/11 09:40 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 07:48	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 07:48	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 07:48	98-82-8	
Methyl-tert-butyl ether	**7.3**	ug/L	1.0	0.12	1		05/14/11 07:48	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 07:48	91-20-3	
Toluene	**2.0**	ug/L	1.0	0.060	1		05/14/11 07:48	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 07:48	1330-20-7	
Toluene-d8 (S)	96	%	70-130		1		05/14/11 07:48	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		05/14/11 07:48	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		05/14/11 07:48	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-8 **Lab ID: 3046399005** Collected: 05/09/11 10:10 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 08:15	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 08:15	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 08:15	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		05/14/11 08:15	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 08:15	91-20-3	
Toluene	**1.0**	ug/L	1.0	0.060	1		05/14/11 08:15	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 08:15	1330-20-7	
Toluene-d8 (S)	101	%	70-130		1		05/14/11 08:15	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/14/11 08:15	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		05/14/11 08:15	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-10 **Lab ID: 3046399006** Collected: 05/09/11 10:30 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**2.3**	ug/L	1.0	0.070	1		05/14/11 08:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 08:41	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 08:41	98-82-8	
Methyl-tert-butyl ether	**6.6**	ug/L	1.0	0.12	1		05/14/11 08:41	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 08:41	91-20-3	
Toluene	**5.5**	ug/L	1.0	0.060	1		05/14/11 08:41	108-88-3	
Xylene (Total)	**3.5**	ug/L	3.0	0.26	1		05/14/11 08:41	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		05/14/11 08:41	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		05/14/11 08:41	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		05/14/11 08:41	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-11 **Lab ID: 3046399007** Collected: 05/09/11 10:55 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**453**	ug/L	20.0	1.4	20		05/14/11 09:46	71-43-2	
Ethylbenzene	**168**	ug/L	1.0	0.17	1		05/14/11 09:07	100-41-4	
Isopropylbenzene (Cumene)	**18.4**	ug/L	1.0	0.070	1		05/14/11 09:07	98-82-8	
Methyl-tert-butyl ether	**202**	ug/L	1.0	0.12	1		05/14/11 09:07	1634-04-4	
Naphthalene	**41.3**	ug/L	2.0	0.13	1		05/14/11 09:07	91-20-3	
Toluene	**20.7**	ug/L	1.0	0.060	1		05/14/11 09:07	108-88-3	
Xylene (Total)	**107**	ug/L	3.0	0.26	1		05/14/11 09:07	1330-20-7	
Toluene-d8 (S)	100	%	70-130		1		05/14/11 09:07	2037-26-5	
4-Bromofluorobenzene (S)	90	%	70-130		1		05/14/11 09:07	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		05/14/11 09:07	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-12 **Lab ID: 3046399008** Collected: 05/09/11 11:45 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**93.3**	ug/L	1.0	0.070	1		05/14/11 10:12	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 10:12	100-41-4	
Isopropylbenzene (Cumene)	**6.5**	ug/L	1.0	0.070	1		05/14/11 10:12	98-82-8	
Methyl-tert-butyl ether	**302**	ug/L	1.0	0.12	1		05/14/11 10:12	1634-04-4	
Naphthalene	**2.5**	ug/L	2.0	0.13	1		05/14/11 10:12	91-20-3	
Toluene	**1.7**	ug/L	1.0	0.060	1		05/14/11 10:12	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 10:12	1330-20-7	
Toluene-d8 (S)	102	%	70-130		1		05/14/11 10:12	2037-26-5	
4-Bromofluorobenzene (S)	91	%	70-130		1		05/14/11 10:12	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		05/14/11 10:12	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-13 **Lab ID: 3046399009** Collected: 05/09/11 11:55 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 10:38	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 10:38	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 10:38	98-82-8	
Methyl-tert-butyl ether	**47.8**	ug/L	1.0	0.12	1		05/14/11 10:38	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 10:38	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 10:38	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 10:38	1330-20-7	
Toluene-d8 (S)	99	%	70-130		1		05/14/11 10:38	2037-26-5	
4-Bromofluorobenzene (S)	91	%	70-130		1		05/14/11 10:38	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		05/14/11 10:38	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-14S **Lab ID: 3046399010** Collected: 05/09/11 12:10 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**269**	ug/L	1.0	0.070	1		05/14/11 11:05	71-43-2	
Ethylbenzene	**52.3**	ug/L	1.0	0.17	1		05/14/11 11:05	100-41-4	
Isopropylbenzene (Cumene)	**13.8**	ug/L	1.0	0.070	1		05/14/11 11:05	98-82-8	
Methyl-tert-butyl ether	**93.5**	ug/L	1.0	0.12	1		05/14/11 11:05	1634-04-4	
Naphthalene	**28.3**	ug/L	2.0	0.13	1		05/14/11 11:05	91-20-3	
Toluene	**9.8**	ug/L	1.0	0.060	1		05/14/11 11:05	108-88-3	
Xylene (Total)	**31.7**	ug/L	3.0	0.26	1		05/14/11 11:05	1330-20-7	
Toluene-d8 (S)	102	%	70-130		1		05/14/11 11:05	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		05/14/11 11:05	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		05/14/11 11:05	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-15S **Lab ID: 3046399011** Collected: 05/09/11 12:55 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**5.4**	ug/L	1.0	0.070	1		05/14/11 11:31	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 11:31	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 11:31	98-82-8	
Methyl-tert-butyl ether	**2.4**	ug/L	1.0	0.12	1		05/14/11 11:31	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 11:31	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 11:31	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 11:31	1330-20-7	
Toluene-d8 (S)	99	%	70-130		1		05/14/11 11:31	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/14/11 11:31	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		05/14/11 11:31	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-16 **Lab ID: 3046399012** Collected: 05/09/11 12:50 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 11:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 11:57	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 11:57	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		05/14/11 11:57	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 11:57	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 11:57	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 11:57	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		05/14/11 11:57	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		05/14/11 11:57	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		05/14/11 11:57	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: MW-17 **Lab ID: 3046399013** Collected: 05/09/11 12:35 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 12:24	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 12:24	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 12:24	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		05/14/11 12:24	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 12:24	91-20-3	
Toluene	**5.0**	ug/L	1.0	0.060	1		05/14/11 12:24	108-88-3	
Xylene (Total)	**5.5**	ug/L	3.0	0.26	1		05/14/11 12:24	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		05/14/11 12:24	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/14/11 12:24	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		05/14/11 12:24	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: Duplicate (MW-11) **Lab ID: 3046399014** Collected: 05/09/11 10:55 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**495**	ug/L	20.0	1.4	20		05/14/11 13:16	71-43-2	
Ethylbenzene	**168**	ug/L	1.0	0.17	1		05/14/11 12:50	100-41-4	
Isopropylbenzene (Cumene)	**17.5**	ug/L	1.0	0.070	1		05/14/11 12:50	98-82-8	
Methyl-tert-butyl ether	**213**	ug/L	1.0	0.12	1		05/14/11 12:50	1634-04-4	
Naphthalene	**40.8**	ug/L	2.0	0.13	1		05/14/11 12:50	91-20-3	
Toluene	**20.9**	ug/L	1.0	0.060	1		05/14/11 12:50	108-88-3	
Xylene (Total)	**107**	ug/L	3.0	0.26	1		05/14/11 12:50	1330-20-7	
Toluene-d8 (S)	97	%	70-130		1		05/14/11 12:50	2037-26-5	
4-Bromofluorobenzene (S)	91	%	70-130		1		05/14/11 12:50	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		05/14/11 12:50	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

Sample: Trip Blank **Lab ID: 3046399015** Collected: 05/09/11 00:01 Received: 05/10/11 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		05/14/11 04:44	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		05/14/11 04:44	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		05/14/11 04:44	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		05/14/11 04:44	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		05/14/11 04:44	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		05/14/11 04:44	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		05/14/11 04:44	1330-20-7	
Toluene-d8 (S)	97	%	70-130		1		05/14/11 04:44	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		05/14/11 04:44	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		05/14/11 04:44	17060-07-0	

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

QC Batch: MSV/9302 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3046399001, 3046399002, 3046399003, 3046399004, 3046399005, 3046399006, 3046399007, 3046399008, 3046399009, 3046399010, 3046399011, 3046399012, 3046399013, 3046399014, 3046399015

METHOD BLANK: 298672 Matrix: Water
Associated Lab Samples: 3046399001, 3046399002, 3046399003, 3046399004, 3046399005, 3046399006, 3046399007, 3046399008, 3046399009, 3046399010, 3046399011, 3046399012, 3046399013, 3046399014, 3046399015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	05/14/11 04:18	
Ethylbenzene	ug/L	ND	1.0	05/14/11 04:18	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/14/11 04:18	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/14/11 04:18	
Naphthalene	ug/L	ND	2.0	05/14/11 04:18	
Toluene	ug/L	ND	1.0	05/14/11 04:18	
Xylene (Total)	ug/L	ND	3.0	05/14/11 04:18	
1,2-Dichloroethane-d4 (S)	%	109	70-130	05/14/11 04:18	
4-Bromofluorobenzene (S)	%	98	70-130	05/14/11 04:18	
Toluene-d8 (S)	%	99	70-130	05/14/11 04:18	

LABORATORY CONTROL SAMPLE: 298673

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	22.7	114	70-130	
Ethylbenzene	ug/L	20	20.1	101	70-130	
Isopropylbenzene (Cumene)	ug/L	20	20.4	102	70-130	
Methyl-tert-butyl ether	ug/L	20	20.2	101	70-130	
Naphthalene	ug/L	20	17.4	87	70-130	
Toluene	ug/L	20	21.6	108	70-130	
Xylene (Total)	ug/L	60	62.8	105	70-130	
1,2-Dichloroethane-d4 (S)	%			105	70-130	
4-Bromofluorobenzene (S)	%			96	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298674 298675

Parameter	Units	3046401001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	22.4	21.6	112	108	70-130	4	30	
Ethylbenzene	ug/L	ND	20	20	20.3	19.9	102	99	70-130	2	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	20.2	20.8	101	104	70-130	3	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.4	19.3	102	97	70-130	5	30	
Naphthalene	ug/L	ND	20	20	15.5	16.3	71	75	70-130	5	30	
Toluene	ug/L	ND	20	20	21.1	20.5	105	102	70-130	3	30	
Xylene (Total)	ug/L	ND	60	60	63.2	60.2	105	100	70-130	5	30	
1,2-Dichloroethane-d4 (S)	%						109	107	70-130			
4-Bromofluorobenzene (S)	%						92	92	70-130			

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298674 298675

Parameter	Units	3046401001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						98	96	70-130			

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QUALIFIERS

Project: 031 Route 119 Amoco
Pace Project No.: 3046399

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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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	Letterle & Associates
Address:	2859 Oxford Boulevard, Suite 110
	Allison Park, PA 15101
Email To:	
Phone: 412-486-0600	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Nate Croasmun
Copy To:	Eric Itle
Purchase Order No.:	
Project Name:	Route 119 Amoco
Project Number:	031

Section C Invoice Information:

Attention:	Tracey Jennewine
Company Name:	Letterle & Associates
Address:	
Pace Quote Reference:	
Pace Project Manager:	Rachel Christner
Pace Profile #:	520

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	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	BTEX	MTBE	Cumene	Naphthalene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-3	WT	G			5-9-11	1010		3				3						X	X	X	X		001
2	MW-4	WT					1105		3				3						X	X	X	X		002
3	MW-6	WT					1035		3				3						X	X	X	X		003
4	MW-7	WT					0940		3				3						X	X	X	X		004
5	MW-8	WT					1010		3				3						X	X	X	X		005
6	MW-10	WT					1030		3				3						X	X	X	X		006
7	MW-11	WT					1055		3				3						X	X	X	X		007
8	MW-12	WT					1145		3				3						X	X	X	X		008
9	MW-13	WT					1155		3				3						X	X	X	X		009
10	MW-14S	WT					1210		3				3						X	X	X	X		010
11	MW-15S	WT					1255		3				3						X	X	X	X		011
12	MW-16	WT					1250		3				3						X	X	X	X		012

3046399

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)
		5-9-11	1905		5/10/11	10:05				
		5/10/11	1510		5/10/11	1310	0.9	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Adam Parazak

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 05/09/2011

*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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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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Email To:	
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Purchase Order No.:	
Project Name:	Route 119 Amoco
Project Number:	031

Section C Invoice Information:

Attention:	Tracey Jennewine
Company Name:	Letterle & Associates
Address:	
Pace Quote Reference:	
Pace Project Manager:	Rachel Christner
Pace Profile #:	520

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	Y/N	Analysis Test: BTEX	MTBE	Cumene	Naphthalene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-17	WT	G			5-9-11	1235		3				3						X	X	X	X		013
2	Duplicate (MW-11)	WT	↓			↓	1055		3				3						X	X	X	X		014
3	Trip Blank	WT	↓			↓	—		2				2						X	X	X	X		015
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Pace Project No./ Lab I.D. 3040399

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)
		05-9-11	1308		5/10/11	10:05				
		5/10/11	1:10		5/10/11	1310	0.9	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Adam Paranzak

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 05/09/2011

*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 invoice not paid within 30 days.

Sample Condition Upon Receipt

LW

Pace Analytical

Client Name: Letterle Project # 30416399

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

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 0.9 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: SMB 5/10/11

Temp should be above freezing to 6°C

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: WT				
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 SMB / 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: Rachel K Cmoch Date: 5/10/11

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)

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Greensburg, PA 15601
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July 29, 2011

Mr. Nate Croasmun
Letterle & Associates
2859 Oxford Boulevard
Suite 110
Allison Park, PA 15101

RE: Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Dear Mr. Croasmun:
Enclosed are the analytical results for sample(s) received by the laboratory on July 15, 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,

Rachel D Christner

Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

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 SUMMARY

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3050311001	**MW-3**	Water	07/15/11 09:40	07/15/11 18:00
3050311002	**MW-4**	Water	07/15/11 11:10	07/15/11 18:00
3050311003	**MW-6**	Water	07/15/11 09:10	07/15/11 18:00
3050311004	**MW-7**	Water	07/15/11 10:05	07/15/11 18:00
3050311005	**MW-8**	Water	07/15/11 09:55	07/15/11 18:00
3050311006	**MW-10**	Water	07/15/11 10:20	07/15/11 18:00
3050311007	**MW-11**	Water	07/15/11 10:40	07/15/11 18:00
3050311008	**MW-12**	Water	07/15/11 11:25	07/15/11 18:00
3050311009	**MW-13**	Water	07/15/11 11:45	07/15/11 18:00
3050311010	**MW-14S**	Water	07/15/11 12:00	07/15/11 18:00
3050311011	**MW-15S**	Water	07/15/11 12:45	07/15/11 18:00
3050311012	**MW-16**	Water	07/15/11 12:30	07/15/11 18:00
3050311013	**MW-17**	Water	07/15/11 12:15	07/15/11 18:00
3050311014	**Duplicate (MW-11)**	Water	07/15/11 00:01	07/15/11 18:00
3050311015	**Trip Blank**	Water	07/15/11 00:01	07/15/11 18:00

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SAMPLE ANALYTE COUNT

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Lab ID	Sample ID	Method	Analysts	Analytes Reported
3050311001	**MW-3**	EPA 8260	MAK	10
3050311002	**MW-4**	EPA 8260	MAK	10
3050311003	**MW-6**	EPA 8260	MAK	10
3050311004	**MW-7**	EPA 8260	MAK	10
3050311005	**MW-8**	EPA 8260	MAK	10
3050311006	**MW-10**	EPA 8260	MAK	10
3050311007	**MW-11**	EPA 8260	MAK	10
3050311008	**MW-12**	EPA 8260	MAK	10
3050311009	**MW-13**	EPA 8260	MAK	10
3050311010	**MW-14S**	EPA 8260	MAK	10
3050311011	**MW-15S**	EPA 8260	MAK	10
3050311012	**MW-16**	EPA 8260	MAK	10
3050311013	**MW-17**	EPA 8260	MAK	10
3050311014	**Duplicate (MW-11)**	EPA 8260	MAK	10
3050311015	**Trip Blank**	EPA 8260	MAK	10

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-3 **Lab ID: 3050311001** Collected: 07/15/11 09:40 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 03:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 03:49	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 03:49	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.19	1		07/21/11 03:49	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 03:49	91-20-3	
Toluene	**6.4**	ug/L	1.0	0.19	1		07/21/11 03:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 03:49	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		07/21/11 03:49	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		07/21/11 03:49	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		07/21/11 03:49	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-4 **Lab ID: 3050311002** Collected: 07/15/11 11:10 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 04:14	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 04:14	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 04:14	98-82-8	
Methyl-tert-butyl ether	**3.3**	ug/L	1.0	0.19	1		07/21/11 04:14	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 04:14	91-20-3	
Toluene	ND	ug/L	1.0	0.19	1		07/21/11 04:14	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 04:14	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		07/21/11 04:14	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130		1		07/21/11 04:14	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		07/21/11 04:14	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-6 **Lab ID: 3050311003** Collected: 07/15/11 09:10 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 04:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 04:40	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 04:40	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.19	1		07/21/11 04:40	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 04:40	91-20-3	
Toluene	ND	ug/L	1.0	0.19	1		07/21/11 04:40	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 04:40	1330-20-7	
Toluene-d8 (S)	94	%	70-130		1		07/21/11 04:40	2037-26-5	
4-Bromofluorobenzene (S)	107	%	70-130		1		07/21/11 04:40	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		07/21/11 04:40	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-7 **Lab ID: 3050311004** Collected: 07/15/11 10:05 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 05:05	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 05:05	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 05:05	98-82-8	
Methyl-tert-butyl ether	**6.9**	ug/L	1.0	0.19	1		07/21/11 05:05	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 05:05	91-20-3	
Toluene	**2.7**	ug/L	1.0	0.19	1		07/21/11 05:05	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 05:05	1330-20-7	
Toluene-d8 (S)	92	%	70-130		1		07/21/11 05:05	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		07/21/11 05:05	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		07/21/11 05:05	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-8 **Lab ID: 3050311005** Collected: 07/15/11 09:55 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 05:31	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 05:31	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 05:31	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.19	1		07/21/11 05:31	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 05:31	91-20-3	
Toluene	**1.4**	ug/L	1.0	0.19	1		07/21/11 05:31	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 05:31	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		07/21/11 05:31	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		07/21/11 05:31	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		07/21/11 05:31	17060-07-0	

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-10 **Lab ID: 3050311006** Collected: 07/15/11 10:20 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**1.4**	ug/L	1.0	0.19	1		07/21/11 05:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 05:57	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 05:57	98-82-8	
Methyl-tert-butyl ether	**6.7**	ug/L	1.0	0.19	1		07/21/11 05:57	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 05:57	91-20-3	
Toluene	**3.7**	ug/L	1.0	0.19	1		07/21/11 05:57	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 05:57	1330-20-7	
Toluene-d8 (S)	94	%	70-130		1		07/21/11 05:57	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		07/21/11 05:57	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		07/21/11 05:57	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-11 **Lab ID: 3050311007** Collected: 07/15/11 10:40 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**404**	ug/L	20.0	3.8	20		07/22/11 00:20	71-43-2	
Ethylbenzene	**159**	ug/L	1.0	0.13	1		07/21/11 06:22	100-41-4	
Isopropylbenzene (Cumene)	**18.2**	ug/L	1.0	0.14	1		07/21/11 06:22	98-82-8	
Methyl-tert-butyl ether	**129**	ug/L	1.0	0.19	1		07/21/11 06:22	1634-04-4	
Naphthalene	**43.8**	ug/L	2.0	0.68	1		07/21/11 06:22	91-20-3	
Toluene	**20.2**	ug/L	1.0	0.19	1		07/21/11 06:22	108-88-3	
Xylene (Total)	**98.4**	ug/L	3.0	0.54	1		07/21/11 06:22	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		07/21/11 06:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		07/21/11 06:22	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		07/21/11 06:22	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-12 **Lab ID: 3050311008** Collected: 07/15/11 11:25 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**76.1**	ug/L	1.0	0.19	1		07/21/11 06:48	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 06:48	100-41-4	
Isopropylbenzene (Cumene)	**5.0**	ug/L	1.0	0.14	1		07/21/11 06:48	98-82-8	
Methyl-tert-butyl ether	**217**	ug/L	1.0	0.19	1		07/21/11 06:48	1634-04-4	
Naphthalene	**4.6**	ug/L	2.0	0.68	1		07/21/11 06:48	91-20-3	
Toluene	**1.2**	ug/L	1.0	0.19	1		07/21/11 06:48	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 06:48	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		07/21/11 06:48	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		07/21/11 06:48	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		07/21/11 06:48	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-13 **Lab ID: 3050311009** Collected: 07/15/11 11:45 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 07:13	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 07:13	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 07:13	98-82-8	
Methyl-tert-butyl ether	**75.3**	ug/L	1.0	0.19	1		07/21/11 07:13	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 07:13	91-20-3	
Toluene	ND	ug/L	1.0	0.19	1		07/21/11 07:13	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 07:13	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		07/21/11 07:13	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		07/21/11 07:13	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		07/21/11 07:13	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-14S **Lab ID: 3050311010** Collected: 07/15/11 12:00 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**324**	ug/L	1.0	0.19	1		07/21/11 07:39	71-43-2	
Ethylbenzene	**137**	ug/L	1.0	0.13	1		07/21/11 07:39	100-41-4	
Isopropylbenzene (Cumene)	**24.7**	ug/L	1.0	0.14	1		07/21/11 07:39	98-82-8	
Methyl-tert-butyl ether	**125**	ug/L	1.0	0.19	1		07/21/11 07:39	1634-04-4	
Naphthalene	**59.5**	ug/L	2.0	0.68	1		07/21/11 07:39	91-20-3	
Toluene	**18.6**	ug/L	1.0	0.19	1		07/21/11 07:39	108-88-3	
Xylene (Total)	**76.7**	ug/L	3.0	0.54	1		07/21/11 07:39	1330-20-7	
Toluene-d8 (S)	96	%	70-130		1		07/21/11 07:39	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		07/21/11 07:39	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		07/21/11 07:39	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-15S **Lab ID: 3050311011** Collected: 07/15/11 12:45 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**1.0**	ug/L	1.0	0.19	1		07/21/11 08:04	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 08:04	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 08:04	98-82-8	
Methyl-tert-butyl ether	**1.8**	ug/L	1.0	0.19	1		07/21/11 08:04	1634-04-4	
Naphthalene	**4.1**	ug/L	2.0	0.68	1		07/21/11 08:04	91-20-3	
Toluene	ND	ug/L	1.0	0.19	1		07/21/11 08:04	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 08:04	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		07/21/11 08:04	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		07/21/11 08:04	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		07/21/11 08:04	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-16 **Lab ID: 3050311012** Collected: 07/15/11 12:30 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 08:30	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 08:30	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 08:30	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.19	1		07/21/11 08:30	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 08:30	91-20-3	
Toluene	ND	ug/L	1.0	0.19	1		07/21/11 08:30	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/21/11 08:30	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		07/21/11 08:30	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		07/21/11 08:30	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		07/21/11 08:30	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: MW-17 **Lab ID: 3050311013** Collected: 07/15/11 12:15 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/21/11 09:07	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/21/11 09:07	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/21/11 09:07	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.19	1		07/21/11 09:07	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/21/11 09:07	91-20-3	
Toluene	**2.8**	ug/L	1.0	0.19	1		07/21/11 09:07	108-88-3	
Xylene (Total)	**9.8**	ug/L	3.0	0.54	1		07/21/11 09:07	1330-20-7	
Toluene-d8 (S)	94	%	70-130		1		07/21/11 09:07	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		07/21/11 09:07	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		07/21/11 09:07	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: Duplicate (MW-11) **Lab ID: 3050311014** Collected: 07/15/11 00:01 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**378**	ug/L	1.0	0.19	1		07/21/11 09:32	71-43-2	
Ethylbenzene	**145**	ug/L	1.0	0.13	1		07/21/11 09:32	100-41-4	
Isopropylbenzene (Cumene)	**17.4**	ug/L	1.0	0.14	1		07/21/11 09:32	98-82-8	
Methyl-tert-butyl ether	**119**	ug/L	1.0	0.19	1		07/21/11 09:32	1634-04-4	
Naphthalene	**41.4**	ug/L	2.0	0.68	1		07/21/11 09:32	91-20-3	
Toluene	**18.2**	ug/L	1.0	0.19	1		07/21/11 09:32	108-88-3	
Xylene (Total)	**89.5**	ug/L	3.0	0.54	1		07/21/11 09:32	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		07/21/11 09:32	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		07/21/11 09:32	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		07/21/11 09:32	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

Sample: Trip Blank **Lab ID: 3050311015** Collected: 07/15/11 00:01 Received: 07/15/11 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.19	1		07/29/11 14:29	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.13	1		07/29/11 14:29	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.14	1		07/29/11 14:29	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.19	1		07/29/11 14:29	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.68	1		07/29/11 14:29	91-20-3	
Toluene	ND	ug/L	1.0	0.19	1		07/29/11 14:29	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.54	1		07/29/11 14:29	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		07/29/11 14:29	2037-26-5	
4-Bromofluorobenzene (S)	128	%	70-130		1		07/29/11 14:29	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		07/29/11 14:29	17060-07-0	

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

QC Batch: MSV/9973 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3050311001, 3050311002, 3050311003, 3050311004, 3050311005, 3050311006, 3050311007, 3050311008, 3050311009, 3050311010, 3050311011, 3050311012, 3050311013, 3050311014

METHOD BLANK: 322632 Matrix: Water
Associated Lab Samples: 3050311001, 3050311002, 3050311003, 3050311004, 3050311005, 3050311006, 3050311007, 3050311008, 3050311009, 3050311010, 3050311011, 3050311012, 3050311013, 3050311014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/21/11 02:07	
Ethylbenzene	ug/L	ND	1.0	07/21/11 02:07	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	07/21/11 02:07	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/21/11 02:07	
Naphthalene	ug/L	ND	2.0	07/21/11 02:07	
Toluene	ug/L	ND	1.0	07/21/11 02:07	
Xylene (Total)	ug/L	ND	3.0	07/21/11 02:07	
1,2-Dichloroethane-d4 (S)	%	104	70-130	07/21/11 02:07	
4-Bromofluorobenzene (S)	%	103	70-130	07/21/11 02:07	
Toluene-d8 (S)	%	94	70-130	07/21/11 02:07	

LABORATORY CONTROL SAMPLE: 322633

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.3	97	69.8-120	
Ethylbenzene	ug/L	20	19.8	99	70.9-124	
Isopropylbenzene (Cumene)	ug/L	20	19.9	100	68.3-129	
Methyl-tert-butyl ether	ug/L	20	21.0	105	66.4-144	
Naphthalene	ug/L	20	26.9	135	61-135	
Toluene	ug/L	20	19.9	100	71.5-120	
Xylene (Total)	ug/L	60	63.3	106	70-129	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			95	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 323070 323071

Parameter	Units	3050311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	19.0	18.5	95	92	70-130	3	30	
Ethylbenzene	ug/L	ND	20	20	20.2	19.7	101	98	70-130	3	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	19.9	19.5	99	98	70-130	2	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.5	20.9	102	105	70-130	2	30	
Naphthalene	ug/L	ND	20	20	22.5	24.6	112	123	70-130	9	30	
Toluene	ug/L	6.4	20	20	25.7	25.2	96	94	70-130	2	30	
Xylene (Total)	ug/L	ND	60	60	63.2	62.5	105	104	70-130	1	30	
1,2-Dichloroethane-d4 (S)	%						101	102	70-130			
4-Bromofluorobenzene (S)	%						97	100	70-130			

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 323070 323071

Parameter	Units	3050311001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						96	95	70-130			

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

QC Batch: MSV/10046
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3050311015

METHOD BLANK: 325995
Matrix: Water
Associated Lab Samples: 3050311015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/29/11 12:19	
Ethylbenzene	ug/L	ND	1.0	07/29/11 12:19	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	07/29/11 12:19	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/29/11 12:19	
Naphthalene	ug/L	ND	2.0	07/29/11 12:19	
Toluene	ug/L	ND	1.0	07/29/11 12:19	
Xylene (Total)	ug/L	ND	3.0	07/29/11 12:19	
1,2-Dichloroethane-d4 (S)	%	106	70-130	07/29/11 12:19	
4-Bromofluorobenzene (S)	%	122	70-130	07/29/11 12:19	
Toluene-d8 (S)	%	96	70-130	07/29/11 12:19	

LABORATORY CONTROL SAMPLE: 325996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.9	95	69.8-120	
Ethylbenzene	ug/L	20	19.6	98	70.9-124	
Isopropylbenzene (Cumene)	ug/L	20	19.2	96	68.3-129	
Methyl-tert-butyl ether	ug/L	20	17.3	86	66.4-144	
Naphthalene	ug/L	20	20.6	103	61-135	
Toluene	ug/L	20	19.1	96	71.5-120	
Xylene (Total)	ug/L	60	60.4	101	70-129	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALIFIERS

Project: 031 Route 119 Amoco
Pace Project No.: 3050311

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.

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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.

Section A Required Client Information:

Company:	Letterle & Associates
Address:	2859 Oxford Boulevard, Suite 110
	Allison Park, PA 15101
Email To:	
Phone: 412-486-0600	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Nate Croasmun
Copy To:	Eric Itle
Purchase Order No.:	
Project Name:	Route 119 Amoco
Project Number:	031

Section C Invoice Information:

Attention:	Tracey Jennewine
Company Name:	Letterle & Associates
Address:	
Pace Quote Reference:	
Pace Project Manager:	Rachel Christner
Pace Profile #:	520

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: 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	BTEX	MTBE	Cumene	Naphthalene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-3	WT	G			7-15-11	0940		3				3						X	X	X	X		3050311 001
2	MW-4	WT					1110		3				3						X	X	X	X		002
3	MW-6	WT					0910		3				3						X	X	X	X		003
4	MW-7	WT					1005		3				3						X	X	X	X		004
5	MW-8	WT					0955		3				3						X	X	X	X		005
6	MW-10	WT					1020		3				3						X	X	X	X		006
7	MW-11	WT					1040		3				3						X	X	X	X		007
8	MW-12	WT					1125		3				3						X	X	X	X		008
9	MW-13	WT					1145		3				3						X	X	X	X		009
10	MW-14S	WT					1200		3				3						X	X	X	X		010
11	MW-15S	WT					1245		3				3						X	X	X	X		011
12	MW-16	WT	↓			↓	1230		3				3						X	X	X	X		012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		7-15-11	1255	Pace	7/15/11	4:05	
	7/15/11	1800		Pace	7/15	1800	5.7 4 N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Adam Granville

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 07/15/2011

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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CHAIN-OF-CUSTODY / Analytical Request Document

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Report To:	Nate Croasmun
Copy To:	Eric Ille
Purchase Order No.:	
Project Name:	Route 119 Amoco
Project Number:	031

Section C Invoice Information:

Attention:	Tracey Jennewine
Company Name:	Letterle & Associates
Address:	
Pace Quote Reference:	
Pace Project Manager:	Rachel Christner
Pace Profile #:	520

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

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	BTEX	MTBE	Cumene	Naphthalene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-17	WT	G			7-15-11	1215		3				3					X	X	X	X		013
2	Duplicate (MW-11)	WT	↓			↓	—		3				3					X	X	X	X		014
3	Trip Blank	WT	↓			↓	—		2				2					X	X	X	X		015
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

Requested Analysis Filtered (Y/N)

3050311

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)
		7-15-11	1258		7/15/11	1705				
	Adam Race	7/15/11	1800	Pace	7/15/11	1800	5.7	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Adam Saranich

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 07/15/2011

*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.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Letterle Project # 3050311

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

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: 5.7 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: RR 7/16

Temp should be above freezing to 6°C

		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: WT		
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: DR Lot # of added preservative:
Samples checked for dechlorination:	☐Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☑Yes ☐No ☐N/A	15. MW16 MW7, MW145, MW16, MW17
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: Rachel B Chitwood **Date:** 7/18/11

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)

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

November 22, 2011

Mr. Mark Valenty
Letterle & Associates
2859 Oxford Boulevard
Suite 110
Allison Park, PA 15101

RE: Project: 031 Route 119
Pace Project No.: 3057433

Dear Mr. Valenty:
Enclosed are the analytical results for sample(s) received by the laboratory on November 10, 2011. 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,

Rachel D Christner

Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 031 Route 119
Pace Project No.: 3057433

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 SUMMARY

Project: 031 Route 119
Pace Project No.: 3057433

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3057433001	MW3	Water	11/09/11 10:55	11/10/11 13:40
3057433002	MW4	Water	11/09/11 11:05	11/10/11 13:40
3057433003	MW6	Water	11/08/11 09:55	11/10/11 13:40
3057433004	MW7	Water	11/09/11 09:45	11/10/11 13:40
3057433005	MW8	Water	11/09/11 10:05	11/10/11 13:40
3057433006	MW10	Water	11/09/11 10:20	11/10/11 13:40
3057433007	MW11	Water	11/09/11 10:40	11/10/11 13:40
3057433008	MW12	Water	11/08/11 10:20	11/10/11 13:40
3057433009	MW13	Water	11/08/11 10:45	11/10/11 13:40
3057433010	MW14	Water	11/08/11 11:05	11/10/11 13:40
3057433011	MW15	Water	11/08/11 11:55	11/10/11 13:40
3057433012	MW16	Water	11/08/11 12:20	11/10/11 13:40
3057433013	MW17	Water	11/08/11 11:30	11/10/11 13:40
3057433014	Duplicate	Water	11/09/11 00:01	11/10/11 13:40
3057433015	Trip Blank	Water	11/08/11 00:01	11/10/11 13:40

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SAMPLE ANALYTE COUNT

Project: 031 Route 119
Pace Project No.: 3057433

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3057433001	MW3	EPA 8260	JAS	10	PASI-PA
3057433002	MW4	EPA 8260	JAS	10	PASI-PA
3057433003	MW6	EPA 8260	JAS	10	PASI-PA
3057433004	MW7	EPA 8260	JAS	10	PASI-PA
3057433005	MW8	EPA 8260	JAS	10	PASI-PA
3057433006	MW10	EPA 8260	JAS	10	PASI-PA
3057433007	MW11	EPA 8260	JAS	10	PASI-PA
3057433008	MW12	EPA 8260	JAS	10	PASI-PA
3057433009	MW13	EPA 8260	JAS	10	PASI-PA
3057433010	MW14	EPA 8260	JAS	10	PASI-PA
3057433011	MW15	EPA 8260	JAS	10	PASI-PA
3057433012	MW16	EPA 8260	JAS	10	PASI-PA
3057433013	MW17	EPA 8260	JAS	10	PASI-PA
3057433014	Duplicate	EPA 8260	JAS	10	PASI-PA
3057433015	Trip Blank	EPA 8260	JAS	10	PASI-PA

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW3 **Lab ID: 3057433001** Collected: 11/09/11 10:55 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 03:23	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 03:23	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 03:23	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		11/16/11 03:23	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 03:23	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 03:23	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 03:23	1330-20-7	
Surrogates									
Toluene-d8 (S)	96	%	70-130		1		11/16/11 03:23	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		11/16/11 03:23	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		11/16/11 03:23	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW4 **Lab ID: 3057433002** Collected: 11/09/11 11:05 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 03:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 03:49	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 03:49	98-82-8	
Methyl-tert-butyl ether	**1.7**	ug/L	1.0	0.12	1		11/16/11 03:49	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 03:49	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 03:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 03:49	1330-20-7	
Surrogates									
Toluene-d8 (S)	95	%	70-130		1		11/16/11 03:49	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		11/16/11 03:49	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		11/16/11 03:49	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW6 **Lab ID: 3057433003** Collected: 11/08/11 09:55 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 04:15	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 04:15	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 04:15	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		11/16/11 04:15	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 04:15	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 04:15	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 04:15	1330-20-7	
Surrogates									
Toluene-d8 (S)	94	%	70-130		1		11/16/11 04:15	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		11/16/11 04:15	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		11/16/11 04:15	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW7 **Lab ID: 3057433004** Collected: 11/09/11 09:45 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 04:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 04:41	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 04:41	98-82-8	
Methyl-tert-butyl ether	**5.5**	ug/L	1.0	0.12	1		11/16/11 04:41	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 04:41	91-20-3	
Toluene	**1.4**	ug/L	1.0	0.060	1		11/16/11 04:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 04:41	1330-20-7	
Surrogates									
Toluene-d8 (S)	94	%	70-130		1		11/16/11 04:41	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130		1		11/16/11 04:41	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		11/16/11 04:41	17060-07-0	

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW8 **Lab ID: 3057433005** Collected: 11/09/11 10:05 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 05:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 05:08	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 05:08	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		11/16/11 05:08	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 05:08	91-20-3	
Toluene	**1.1**	ug/L	1.0	0.060	1		11/16/11 05:08	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 05:08	1330-20-7	
Surrogates									
Toluene-d8 (S)	94	%	70-130		1		11/16/11 05:08	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		11/16/11 05:08	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		11/16/11 05:08	17060-07-0	

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW10 **Lab ID: 3057433006** Collected: 11/09/11 10:20 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 05:34	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 05:34	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 05:34	98-82-8	
Methyl-tert-butyl ether	**7.5**	ug/L	1.0	0.12	1		11/16/11 05:34	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 05:34	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 05:34	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 05:34	1330-20-7	
Surrogates									
Toluene-d8 (S)	92	%	70-130		1		11/16/11 05:34	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		11/16/11 05:34	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		11/16/11 05:34	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW11 **Lab ID: 3057433007** Collected: 11/09/11 10:40 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**929**	ug/L	10.0	0.70	10		11/16/11 06:39	71-43-2	
Ethylbenzene	**464**	ug/L	10.0	1.7	10		11/16/11 06:39	100-41-4	
Isopropylbenzene (Cumene)	**45.3**	ug/L	1.0	0.070	1		11/16/11 06:00	98-82-8	
Methyl-tert-butyl ether	**295**	ug/L	1.0	0.12	1		11/16/11 06:00	1634-04-4	
Naphthalene	**150**	ug/L	2.0	0.13	1		11/16/11 06:00	91-20-3	
Toluene	**46.1**	ug/L	1.0	0.060	1		11/16/11 06:00	108-88-3	
Xylene (Total)	**219**	ug/L	3.0	0.26	1		11/16/11 06:00	1330-20-7	
Surrogates									
Toluene-d8 (S)	101	%	70-130		1		11/16/11 06:00	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		11/16/11 06:00	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		11/16/11 06:00	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW12 **Lab ID: 3057433008** Collected: 11/08/11 10:20 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**120**	ug/L	1.0	0.070	1		11/16/11 07:05	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 07:05	100-41-4	
Isopropylbenzene (Cumene)	**10.9**	ug/L	1.0	0.070	1		11/16/11 07:05	98-82-8	
Methyl-tert-butyl ether	**216**	ug/L	1.0	0.12	1		11/16/11 07:05	1634-04-4	
Naphthalene	**3.7**	ug/L	2.0	0.13	1		11/16/11 07:05	91-20-3	
Toluene	**1.7**	ug/L	1.0	0.060	1		11/16/11 07:05	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 07:05	1330-20-7	
Surrogates									
Toluene-d8 (S)	97	%	70-130		1		11/16/11 07:05	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		11/16/11 07:05	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		11/16/11 07:05	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW13 **Lab ID: 3057433009** Collected: 11/08/11 10:45 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 07:31	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 07:31	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 07:31	98-82-8	
Methyl-tert-butyl ether	**74.1**	ug/L	1.0	0.12	1		11/16/11 07:31	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 07:31	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 07:31	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 07:31	1330-20-7	
Surrogates									
Toluene-d8 (S)	95	%	70-130		1		11/16/11 07:31	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130		1		11/16/11 07:31	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		11/16/11 07:31	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW14 **Lab ID: 3057433010** Collected: 11/08/11 11:05 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**278**	ug/L	1.0	0.070	1		11/16/11 07:58	71-43-2	
Ethylbenzene	**125**	ug/L	1.0	0.17	1		11/16/11 07:58	100-41-4	
Isopropylbenzene (Cumene)	**20.6**	ug/L	1.0	0.070	1		11/16/11 07:58	98-82-8	
Methyl-tert-butyl ether	**91.5**	ug/L	1.0	0.12	1		11/16/11 07:58	1634-04-4	
Naphthalene	**43.6**	ug/L	2.0	0.13	1		11/16/11 07:58	91-20-3	
Toluene	**12.9**	ug/L	1.0	0.060	1		11/16/11 07:58	108-88-3	
Xylene (Total)	**59.1**	ug/L	3.0	0.26	1		11/16/11 07:58	1330-20-7	
Surrogates									
Toluene-d8 (S)	96	%	70-130		1		11/16/11 07:58	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		11/16/11 07:58	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		11/16/11 07:58	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW15 **Lab ID: 3057433011** Collected: 11/08/11 11:55 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**58.0**	ug/L	1.0	0.070	1		11/16/11 08:24	71-43-2	
Ethylbenzene	**9.4**	ug/L	1.0	0.17	1		11/16/11 08:24	100-41-4	
Isopropylbenzene (Cumene)	**1.5**	ug/L	1.0	0.070	1		11/16/11 08:24	98-82-8	
Methyl-tert-butyl ether	**17.5**	ug/L	1.0	0.12	1		11/16/11 08:24	1634-04-4	
Naphthalene	**6.1**	ug/L	2.0	0.13	1		11/16/11 08:24	91-20-3	
Toluene	**3.1**	ug/L	1.0	0.060	1		11/16/11 08:24	108-88-3	
Xylene (Total)	**7.9**	ug/L	3.0	0.26	1		11/16/11 08:24	1330-20-7	
Surrogates									
Toluene-d8 (S)	94	%	70-130		1		11/16/11 08:24	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		11/16/11 08:24	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		11/16/11 08:24	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW16 **Lab ID: 3057433012** Collected: 11/08/11 12:20 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 08:50	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 08:50	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 08:50	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		11/16/11 08:50	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 08:50	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 08:50	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 08:50	1330-20-7	
Surrogates									
Toluene-d8 (S)	95	%	70-130		1		11/16/11 08:50	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		11/16/11 08:50	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		11/16/11 08:50	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: MW17 **Lab ID: 3057433013** Collected: 11/08/11 11:30 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 09:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 09:16	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 09:16	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		11/16/11 09:16	1634-04-4	
Naphthalene	**4.0**	ug/L	2.0	0.13	1		11/16/11 09:16	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 09:16	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 09:16	1330-20-7	
Surrogates									
Toluene-d8 (S)	97	%	70-130		1		11/16/11 09:16	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		11/16/11 09:16	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		11/16/11 09:16	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: Duplicate **Lab ID: 3057433014** Collected: 11/09/11 00:01 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**1010**	ug/L	10.0	0.70	10		11/16/11 10:09	71-43-2	
Ethylbenzene	**506**	ug/L	10.0	1.7	10		11/16/11 10:09	100-41-4	
Isopropylbenzene (Cumene)	**49.5**	ug/L	1.0	0.070	1		11/16/11 09:42	98-82-8	
Methyl-tert-butyl ether	**316**	ug/L	1.0	0.12	1		11/16/11 09:42	1634-04-4	
Naphthalene	**153**	ug/L	2.0	0.13	1		11/16/11 09:42	91-20-3	
Toluene	**50.8**	ug/L	1.0	0.060	1		11/16/11 09:42	108-88-3	
Xylene (Total)	**238**	ug/L	3.0	0.26	1		11/16/11 09:42	1330-20-7	
Surrogates									
Toluene-d8 (S)	103	%	70-130		1		11/16/11 09:42	2037-26-5	
4-Bromofluorobenzene (S)	106	%	70-130		1		11/16/11 09:42	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		11/16/11 09:42	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3057433

Sample: Trip Blank **Lab ID: 3057433015** Collected: 11/08/11 00:01 Received: 11/10/11 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		11/16/11 02:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		11/16/11 02:56	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		11/16/11 02:56	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		11/16/11 02:56	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		11/16/11 02:56	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		11/16/11 02:56	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		11/16/11 02:56	1330-20-7	
Surrogates									
Toluene-d8 (S)	94	%	70-130		1		11/16/11 02:56	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		11/16/11 02:56	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		11/16/11 02:56	17060-07-0	

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QUALITY CONTROL DATA

Project: 031 Route 119
Pace Project No.: 3057433

QC Batch: MSV/11134 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3057433001, 3057433002, 3057433003, 3057433004, 3057433005, 3057433006, 3057433007, 3057433008, 3057433009, 3057433010, 3057433011, 3057433012, 3057433013, 3057433014, 3057433015

METHOD BLANK: 367413 Matrix: Water
Associated Lab Samples: 3057433001, 3057433002, 3057433003, 3057433004, 3057433005, 3057433006, 3057433007, 3057433008, 3057433009, 3057433010, 3057433011, 3057433012, 3057433013, 3057433014, 3057433015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	11/16/11 02:30	
Ethylbenzene	ug/L	ND	1.0	11/16/11 02:30	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	11/16/11 02:30	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/16/11 02:30	
Naphthalene	ug/L	ND	2.0	11/16/11 02:30	
Toluene	ug/L	ND	1.0	11/16/11 02:30	
Xylene (Total)	ug/L	ND	3.0	11/16/11 02:30	
1,2-Dichloroethane-d4 (S)	%	98	70-130	11/16/11 02:30	
4-Bromofluorobenzene (S)	%	105	70-130	11/16/11 02:30	
Toluene-d8 (S)	%	94	70-130	11/16/11 02:30	

LABORATORY CONTROL SAMPLE: 367414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.3	81	69.8-120	
Ethylbenzene	ug/L	20	17.3	87	70.9-124	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	68.3-129	
Methyl-tert-butyl ether	ug/L	20	18.2	91	66.4-144	
Naphthalene	ug/L	20	21.0	105	61-135	
Toluene	ug/L	20	17.0	85	71.5-120	
Xylene (Total)	ug/L	60	52.1	87	70-129	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 367415 367416

Parameter	Units	3057441003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	21.1	19.3	106	96	70-130	9	30	
Ethylbenzene	ug/L	ND	20	20	22.0	19.2	110	96	70-130	14	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	23.0	19.9	115	99	70-130	15	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.4	18.9	102	94	70-130	8	30	
Naphthalene	ug/L	ND	20	20	22.4	20.2	106	95	70-130	10	30	
Toluene	ug/L	ND	20	20	21.6	19.6	108	98	70-130	10	30	
Xylene (Total)	ug/L	ND	60	60	64.9	57.5	108	96	70-130	12	30	
1,2-Dichloroethane-d4 (S)	%						100	99	70-130			
4-Bromofluorobenzene (S)	%						104	101	70-130			

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QUALITY CONTROL DATA

Project: 031 Route 119
Pace Project No.: 3057433

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 367415 367416

Parameter	Units	3057441003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						97	96	70-130			

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QUALIFIERS

Project: 031 Route 119
Pace Project No.: 3057433

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

Pace Analytical
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 2

1509418

Section A Required Client Information:

Company: Letterle + Associates, LLC
Address: 2859 Oxford Blvd Suite 110
Allison Park PA 15101
Email To: dgrossmeier@letterle.com
Phone: 412 486 0600 Fax: 412 486 0674
Requested Due Date/TAT: Normal

Section B Required Project Information:

Report To: SAME
Copy To:
Purchase Order No.:
Project Name: Route 119
Project Number: 031

Section C Invoice Information:

Attention: SAME
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Rachel Christner
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

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

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	Requested Analysis Filtered (Y/N): BTEX	MTBE	Naphthalene	Cumene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW 3	WT	G			11-9	10:55		3				3						X	X	X	X		3057433 001
2	MW 4					11-9	11:05																	002
3	MW 6					11-8	9:55																	003
4	MW 7					11-9	9:45																	004
5	MW 8					11-9	10:05																	005
6	~~MW 9~~					~~11-9~~	~~10:30~~																	0
7	MW 10					11-9	10:30																	006
8	MW 11					11-9	10:40																	007
9	MW 12					11-8	10:20																	008
10	MW 13					11-8	10:45																	009
11	MW 14					11-8	11:05																	010
12	MW 15					11-8	11:55																	011

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)
MW9 doesn't exist.				GR Pace	11-10-11	8:50				
	GR Pace	11-10-11	1:40	Jensen Sides / Pace	11/10/11	1340	3.8	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Justin Tobosky
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 11-9-11

*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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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1509419

Section A Required Client Information:

Company: L. Robert Associates LLC
Address: 2859 Oxford Blvd Suite 110
Allison Park PA 15101
Email To: rcrossman@lrobertassociates.com
Phone: 412 486 0660 Fax: 412 486 0674
Requested Due Date/TAT: Normal

Section B Required Project Information:

Report To: Same
Copy To:
Purchase Order No.:
Project Name: Route 119
Project Number: 031

Section C Invoice Information:

Attention: Same
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Rachel Christner
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

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

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	BTEX	MTBE	Naphthalene	Cumene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW16	WT	G			11-8	12:20		3				3						X	X	X	X		30574330 12
2	MW17	WT	G			11-8	11:30		3				3						X	X	X	X		013
3	Duplicate	WT	G			11-9	-		3				3						X	X	X	Y		014
4	Trip Blank	WT	G			11-8	-		2				2						X	X	X	X		015
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				GR Pace	11-10-11	9:50				
	GR Pace	11-10-11	13:40	Jensen Silex / Pace	11-10-11	1340	3.8	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Justin Tabasky
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11-9-11

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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Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

January 24, 2012

Mr. Mark Valenty
Letterle & Associates
2859 Oxford Boulevard
Suite 110
Allison Park, PA 15101

RE: Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Dear Mr. Valenty:
Enclosed are the analytical results for sample(s) received by the laboratory on January 13, 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,

Rachel D Christner

Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

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
Virginia VELAP (Cert # 460198)
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE SUMMARY

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3061114001	MW-3	Water	01/12/12 10:25	01/13/12 16:30
3061114002	MW-4	Water	01/12/12 10:55	01/13/12 16:30
3061114003	MW-6	Water	01/12/12 10:00	01/13/12 16:30
3061114004	MW-7	Water	01/12/12 10:35	01/13/12 16:30
3061114005	MW-8	Water	01/12/12 11:25	01/13/12 16:30
3061114006	MW-10	Water	01/12/12 10:10	01/13/12 16:30
3061114007	MW-11	Water	01/12/12 11:00	01/13/12 16:30
3061114008	MW-12	Water	01/12/12 11:30	01/13/12 16:30
3061114009	MW-13	Water	01/12/12 11:45	01/13/12 16:30
3061114010	MW-14S	Water	01/12/12 11:55	01/13/12 16:30
3061114011	MW-15S	Water	01/12/12 12:35	01/13/12 16:30
3061114012	MW-16	Water	01/12/12 12:25	01/13/12 16:30
3061114013	MW-17	Water	01/12/12 12:05	01/13/12 16:30
3061114014	Duplicate (MW-11)	Water	01/12/12 11:00	01/13/12 16:30
3061114015	Trip Blank	Water	01/12/12 00:01	01/13/12 16:30

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SAMPLE ANALYTE COUNT

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3061114001	MW-3	EPA 8260	JAS	10	PASI-PA
3061114002	MW-4	EPA 8260	JAS	10	PASI-PA
3061114003	MW-6	EPA 8260	JAS	10	PASI-PA
3061114004	MW-7	EPA 8260	JAS	10	PASI-PA
3061114005	MW-8	EPA 8260	JAS	10	PASI-PA
3061114006	MW-10	EPA 8260	JAS	10	PASI-PA
3061114007	MW-11	EPA 8260	JAS	10	PASI-PA
3061114008	MW-12	EPA 8260	JAS	10	PASI-PA
3061114009	MW-13	EPA 8260	JAS	10	PASI-PA
3061114010	MW-14S	EPA 8260	JAS	10	PASI-PA
3061114011	MW-15S	EPA 8260	JAS	10	PASI-PA
3061114012	MW-16	EPA 8260	JAS	10	PASI-PA
3061114013	MW-17	EPA 8260	JAS	10	PASI-PA
3061114014	Duplicate (MW-11)	EPA 8260	JAS	10	PASI-PA
3061114015	Trip Blank	EPA 8260	JAS	10	PASI-PA

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-3 **Lab ID: 3061114001** Collected: 01/12/12 10:25 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 15:30	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 15:30	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 15:30	98-82-8	
Methyl-tert-butyl ether	**1.3**	ug/L	1.0	0.12	1		01/20/12 15:30	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 15:30	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 15:30	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 15:30	1330-20-7	
Surrogates									
Toluene-d8 (S)	86	%	70-130		1		01/20/12 15:30	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		01/20/12 15:30	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		01/20/12 15:30	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-4 **Lab ID: 3061114002** Collected: 01/12/12 10:55 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 15:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 15:56	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 15:56	98-82-8	
Methyl-tert-butyl ether	**3.1**	ug/L	1.0	0.12	1		01/20/12 15:56	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 15:56	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 15:56	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 15:56	1330-20-7	
Surrogates									
Toluene-d8 (S)	85	%	70-130		1		01/20/12 15:56	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		01/20/12 15:56	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		01/20/12 15:56	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-6 **Lab ID: 3061114003** Collected: 01/12/12 10:00 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 16:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 16:22	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 16:22	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		01/20/12 16:22	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 16:22	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 16:22	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 16:22	1330-20-7	
Surrogates									
Toluene-d8 (S)	86	%	70-130		1		01/20/12 16:22	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		01/20/12 16:22	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		01/20/12 16:22	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-7 **Lab ID: 3061114004** Collected: 01/12/12 10:35 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 16:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 16:49	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 16:49	98-82-8	
Methyl-tert-butyl ether	**6.1**	ug/L	1.0	0.12	1		01/20/12 16:49	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 16:49	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 16:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 16:49	1330-20-7	
Surrogates									
Toluene-d8 (S)	88	%	70-130		1		01/20/12 16:49	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		01/20/12 16:49	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		01/20/12 16:49	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-8 **Lab ID: 3061114005** Collected: 01/12/12 11:25 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 17:15	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 17:15	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 17:15	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		01/20/12 17:15	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 17:15	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 17:15	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 17:15	1330-20-7	
Surrogates									
Toluene-d8 (S)	87	%	70-130		1		01/20/12 17:15	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		01/20/12 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		01/20/12 17:15	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-10 **Lab ID: 3061114006** Collected: 01/12/12 10:10 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 17:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 17:41	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 17:41	98-82-8	
Methyl-tert-butyl ether	**10.6**	ug/L	1.0	0.12	1		01/20/12 17:41	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 17:41	91-20-3	
Toluene	**2.3**	ug/L	1.0	0.060	1		01/20/12 17:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 17:41	1330-20-7	
Surrogates									
Toluene-d8 (S)	86	%	70-130		1		01/20/12 17:41	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		01/20/12 17:41	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		01/20/12 17:41	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-11 **Lab ID: 3061114007** Collected: 01/12/12 11:00 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**529**	ug/L	10.0	0.70	10		01/20/12 18:34	71-43-2	
Ethylbenzene	**256**	ug/L	1.0	0.17	1		01/20/12 18:07	100-41-4	
Isopropylbenzene (Cumene)	**24.8**	ug/L	1.0	0.070	1		01/20/12 18:07	98-82-8	
Methyl-tert-butyl ether	**233**	ug/L	1.0	0.12	1		01/20/12 18:07	1634-04-4	
Naphthalene	**70.3**	ug/L	2.0	0.13	1		01/20/12 18:07	91-20-3	
Toluene	**31.6**	ug/L	1.0	0.060	1		01/20/12 18:07	108-88-3	
Xylene (Total)	**132**	ug/L	3.0	0.26	1		01/20/12 18:07	1330-20-7	
Surrogates									
Toluene-d8 (S)	96	%	70-130		1		01/20/12 18:07	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130		1		01/20/12 18:07	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		01/20/12 18:07	17060-07-0	

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-12 **Lab ID: 3061114008** Collected: 01/12/12 11:30 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**44.7**	ug/L	1.0	0.070	1		01/20/12 19:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 19:00	100-41-4	
Isopropylbenzene (Cumene)	**1.4**	ug/L	1.0	0.070	1		01/20/12 19:00	98-82-8	
Methyl-tert-butyl ether	**298**	ug/L	1.0	0.12	1		01/20/12 19:00	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 19:00	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 19:00	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 19:00	1330-20-7	
Surrogates									
Toluene-d8 (S)	88	%	70-130		1		01/20/12 19:00	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		01/20/12 19:00	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		01/20/12 19:00	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-13 **Lab ID: 3061114009** Collected: 01/12/12 11:45 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 19:26	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 19:26	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 19:26	98-82-8	
Methyl-tert-butyl ether	**125**	ug/L	1.0	0.12	1		01/20/12 19:26	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 19:26	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 19:26	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 19:26	1330-20-7	
Surrogates									
Toluene-d8 (S)	84	%	70-130		1		01/20/12 19:26	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		01/20/12 19:26	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		01/20/12 19:26	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-14S **Lab ID: 3061114010** Collected: 01/12/12 11:55 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**166**	ug/L	1.0	0.070	1		01/20/12 19:52	71-43-2	
Ethylbenzene	**81.0**	ug/L	1.0	0.17	1		01/20/12 19:52	100-41-4	
Isopropylbenzene (Cumene)	**14.6**	ug/L	1.0	0.070	1		01/20/12 19:52	98-82-8	
Methyl-tert-butyl ether	**83.9**	ug/L	1.0	0.12	1		01/20/12 19:52	1634-04-4	
Naphthalene	**17.2**	ug/L	2.0	0.13	1		01/20/12 19:52	91-20-3	
Toluene	**8.2**	ug/L	1.0	0.060	1		01/20/12 19:52	108-88-3	
Xylene (Total)	**32.9**	ug/L	3.0	0.26	1		01/20/12 19:52	1330-20-7	
Surrogates									
Toluene-d8 (S)	88	%	70-130		1		01/20/12 19:52	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		01/20/12 19:52	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		01/20/12 19:52	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-15S **Lab ID: 3061114011** Collected: 01/12/12 12:35 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**70.6**	ug/L	1.0	0.070	1		01/20/12 20:19	71-43-2	
Ethylbenzene	**17.0**	ug/L	1.0	0.17	1		01/20/12 20:19	100-41-4	
Isopropylbenzene (Cumene)	**2.3**	ug/L	1.0	0.070	1		01/20/12 20:19	98-82-8	
Methyl-tert-butyl ether	**31.2**	ug/L	1.0	0.12	1		01/20/12 20:19	1634-04-4	
Naphthalene	**6.2**	ug/L	2.0	0.13	1		01/20/12 20:19	91-20-3	
Toluene	**4.9**	ug/L	1.0	0.060	1		01/20/12 20:19	108-88-3	
Xylene (Total)	**17.7**	ug/L	3.0	0.26	1		01/20/12 20:19	1330-20-7	
Surrogates									
Toluene-d8 (S)	83	%	70-130		1		01/20/12 20:19	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		01/20/12 20:19	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		01/20/12 20:19	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-16 **Lab ID: 3061114012** Collected: 01/12/12 12:25 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 20:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 20:45	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 20:45	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		01/20/12 20:45	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 20:45	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 20:45	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 20:45	1330-20-7	
Surrogates									
Toluene-d8 (S)	84	%	70-130		1		01/20/12 20:45	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		01/20/12 20:45	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		01/20/12 20:45	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: MW-17 **Lab ID: 3061114013** Collected: 01/12/12 12:05 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 21:11	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 21:11	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 21:11	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		01/20/12 21:11	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 21:11	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 21:11	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 21:11	1330-20-7	
Surrogates									
Toluene-d8 (S)	83	%	70-130		1		01/20/12 21:11	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		01/20/12 21:11	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		01/20/12 21:11	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: Duplicate (MW-11) **Lab ID: 3061114014** Collected: 01/12/12 11:00 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**477**	ug/L	10.0	0.70	10		01/20/12 22:04	71-43-2	
Ethylbenzene	**239**	ug/L	1.0	0.17	1		01/20/12 21:38	100-41-4	
Isopropylbenzene (Cumene)	**23.3**	ug/L	1.0	0.070	1		01/20/12 21:38	98-82-8	
Methyl-tert-butyl ether	**222**	ug/L	1.0	0.12	1		01/20/12 21:38	1634-04-4	
Naphthalene	**67.2**	ug/L	2.0	0.13	1		01/20/12 21:38	91-20-3	
Toluene	**29.3**	ug/L	1.0	0.060	1		01/20/12 21:38	108-88-3	
Xylene (Total)	**122**	ug/L	3.0	0.26	1		01/20/12 21:38	1330-20-7	
Surrogates									
Toluene-d8 (S)	92	%	70-130		1		01/20/12 21:38	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		01/20/12 21:38	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		01/20/12 21:38	17060-07-0	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Sample: Trip Blank **Lab ID: 3061114015** Collected: 01/12/12 00:01 Received: 01/13/12 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	ND	ug/L	1.0	0.070	1		01/20/12 15:03	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.17	1		01/20/12 15:03	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.070	1		01/20/12 15:03	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.12	1		01/20/12 15:03	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.13	1		01/20/12 15:03	91-20-3	
Toluene	ND	ug/L	1.0	0.060	1		01/20/12 15:03	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.26	1		01/20/12 15:03	1330-20-7	
Surrogates									
Toluene-d8 (S)	87	%	70-130		1		01/20/12 15:03	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		01/20/12 15:03	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		01/20/12 15:03	17060-07-0	

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

QC Batch: MSV/11732 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3061114001, 3061114002, 3061114003, 3061114004, 3061114005, 3061114006, 3061114007, 3061114008, 3061114009, 3061114010, 3061114011, 3061114012, 3061114013, 3061114014, 3061114015

METHOD BLANK: 394081 Matrix: Water
Associated Lab Samples: 3061114001, 3061114002, 3061114003, 3061114004, 3061114005, 3061114006, 3061114007, 3061114008, 3061114009, 3061114010, 3061114011, 3061114012, 3061114013, 3061114014, 3061114015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/20/12 12:53	
Ethylbenzene	ug/L	ND	1.0	01/20/12 12:53	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/20/12 12:53	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/20/12 12:53	
Naphthalene	ug/L	ND	2.0	01/20/12 12:53	
Toluene	ug/L	ND	1.0	01/20/12 12:53	
Xylene (Total)	ug/L	ND	3.0	01/20/12 12:53	
1,2-Dichloroethane-d4 (S)	%	103	70-130	01/20/12 12:53	
4-Bromofluorobenzene (S)	%	97	70-130	01/20/12 12:53	
Toluene-d8 (S)	%	88	70-130	01/20/12 12:53	

LABORATORY CONTROL SAMPLE: 394082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.3	91	69.8-120	
Ethylbenzene	ug/L	20	19.4	97	70.9-124	
Isopropylbenzene (Cumene)	ug/L	20	19.6	98	68.3-129	
Methyl-tert-butyl ether	ug/L	20	24.3	122	66.4-144	
Naphthalene	ug/L	20	18.9	94	61-135	
Toluene	ug/L	20	18.8	94	71.5-120	
Xylene (Total)	ug/L	60	61.3	102	70-129	
1,2-Dichloroethane-d4 (S)	%			107	70-130	
4-Bromofluorobenzene (S)	%			92	70-130	
Toluene-d8 (S)	%			85	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394083 394084

Parameter	Units	3061114001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	18.2	17.6	91	88	69.8-120	3	30	
Ethylbenzene	ug/L	ND	20	20	19.3	18.6	96	93	70.9-124	4	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	17.7	18.3	89	91	68.3-129	3	30	
Methyl-tert-butyl ether	ug/L	1.3	20	20	20.7	22.1	97	104	66.4-144	7	30	
Naphthalene	ug/L	ND	20	20	14.3	16.3	71	82	61-135	14	30	
Toluene	ug/L	ND	20	20	18.8	18.1	94	90	71.5-120	4	30	
Xylene (Total)	ug/L	ND	60	60	59.3	58.5	99	98	70-129	1	30	
1,2-Dichloroethane-d4 (S)	%						95	99	70-130			
4-Bromofluorobenzene (S)	%						91	95	70-130			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394083 394084

Parameter	Units	3061114001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						86	83	70-130			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

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

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 031 Route 119 Amoco
Pace Project No.: 3061114

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3061114001	MW-3	EPA 8260	MSV/11732		
3061114002	MW-4	EPA 8260	MSV/11732		
3061114003	MW-6	EPA 8260	MSV/11732		
3061114004	MW-7	EPA 8260	MSV/11732		
3061114005	MW-8	EPA 8260	MSV/11732		
3061114006	MW-10	EPA 8260	MSV/11732		
3061114007	MW-11	EPA 8260	MSV/11732		
3061114008	MW-12	EPA 8260	MSV/11732		
3061114009	MW-13	EPA 8260	MSV/11732		
3061114010	MW-14S	EPA 8260	MSV/11732		
3061114011	MW-15S	EPA 8260	MSV/11732		
3061114012	MW-16	EPA 8260	MSV/11732		
3061114013	MW-17	EPA 8260	MSV/11732		
3061114014	Duplicate (MW-11)	EPA 8260	MSV/11732		
3061114015	Trip Blank	EPA 8260	MSV/11732		

Pace Analytical
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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.

Section A Required Client Information:

Company:	Letterle & Associates
Address:	2859 Oxford Boulevard, Suite 110
	Allison Park, PA 15101
Email To:	
Phone: 412-486-0600	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Nate Croasmun
Copy To:	Eric Itle
Purchase Order No.:	
Project Name:	Route 119 Amoco
Project Number:	031

Section C Invoice Information:

Attention:	Tracey Jennewine
Company Name:	Letterle & Associates
Address:	
Pace Quote Reference:	
Pace Project Manager:	Rachel Christner
Pace Profile #:	520

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

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	BTEX	MTBE	Cumene	Naphthalene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-3	WT	G			1-12	1026		3				3					X	X	X	X		30611114 001
2	MW-4	WT					1055		3				3					X	X	X	X		002
3	MW-6	WT					1000		3				3					X	X	X	X		003
4	MW-7	WT					1035		3				3					X	X	X	X		004
5	MW-8	WT					1125		3				3					X	X	X	X		005
6	MW-10	WT					1020		3				3					X	X	X	X		006
7	MW-11	WT					1100		3				3					X	X	X	X		007
8	MW-12	WT					1130		3				3					X	X	X	X		008
9	MW-13	WT					1145		3				3					X	X	X	X		009
10	MW-14S	WT					1155		3				3					X	X	X	X		010
11	MW-15S	WT					1235		3				3					X	X	X	X		011
12	MW-16	WT					1225		3				3					X	X	X	X		012

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	MS	1-12	1245	GR Pace	1-13-12	3:00				
	GR Pace	1-13-12	4:30	Jessen Sales / Pace	1-13-12	1630	0.0	Y	N	

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	MATT SINAGRA	DATE Signed (MM/DD/YY):	01/12/12	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER:							

*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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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

N

Section A Required Client Information:

Company:	Letterle & Associates
Address:	2859 Oxford Boulevard, Suite 110
	Allison Park, PA 15101
Email To:	
Phone: 412-486-0600	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Nate Croasmun
Copy To:	Eric Ille
Purchase Order No.:	
Project Name:	Route 119 Amoco
Project Number:	031

Section C Invoice Information:

Attention:	Tracey Jennewine
Company Name:	Letterle & Associates
Address:	
Pace Quote Reference:	
Pace Project Manager:	Rachel Christner
Pace Profile #:	520

REGULATORY AGENCY

[ ] NPDES [ ] GROUND WATER [ ] DRINKING WATER
[X] 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

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	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: BTEX	MTBE	Cumene	Naphthalene	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-17	WT	G			1-12	1245		3				3						X	X	X	X		
2	Duplicate (MW-11)	WT	G			1-12	1100		3				3						X	X	X	X		
3	Trip Blank	WT	G			1-12	—		2				2						X	X	X	X		
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	MS	1-12	1245	GR Pace	1-13-12	3:00	
	GR Pace	1-13-12	4:30	Jeven Silks / Pace	1-13-12	1630	0.0 Y N
							0.0 Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MATT SINATRA

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 01/12/12

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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Greensburg, PA 15601
(724)850-5600

February 22, 2012

Mr. Mark Valenty
Letterle & Associates
2859 Oxford Boulevard
Suite 110
Allison Park, PA 15101

RE: Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Dear Mr. Valenty:
Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 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,

Rachel D Christner

Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3062886001	VP-5	Air	02/07/12 13:30	02/09/12 14:00
3062886002	VP-6	Air	02/07/12 14:00	02/09/12 14:00

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SAMPLE ANALYTE COUNT

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3062886001	**VP-5**	TO-15	CJR	8	PASI-M
3062886002	**VP-6**	TO-15	CJR	8	PASI-M

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Sample: VP-5 **Lab ID: 3062886001** Collected: 02/07/12 13:30 Received: 02/09/12 14:00 Matrix: Air

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
Benzene	**2.6**	ppbv	0.90	0.45	1.8		02/20/12 14:53	71-43-2	
Ethylbenzene	**2.0**	ppbv	0.90	0.45	1.8		02/20/12 14:53	100-41-4	
Isopropylbenzene (Cumene)	ND	ppbv	0.90	0.45	1.8		02/20/12 14:53	98-82-8	
Methyl-tert-butyl ether	ND	ppbv	0.90	0.45	1.8		02/20/12 14:53	1634-04-4	
Naphthalene	ND	ppbv	0.90	0.45	1.8		02/20/12 14:53	91-20-3	
Toluene	**11.1**	ppbv	0.90	0.45	1.8		02/20/12 14:53	108-88-3	
m&p-Xylene	**5.7**	ppbv	1.8	0.90	1.8		02/20/12 14:53	179601-23-1	
o-Xylene	**2.3**	ppbv	0.90	0.45	1.8		02/20/12 14:53	95-47-6	

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Sample: VP-6 **Lab ID: 3062886002** Collected: 02/07/12 14:00 Received: 02/09/12 14:00 Matrix: Air

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15								
Benzene	**1.3**	ppbv	0.67	0.34	1.34		02/17/12 22:58	71-43-2	
Ethylbenzene	**2.3**	ppbv	0.67	0.34	1.34		02/17/12 22:58	100-41-4	
Isopropylbenzene (Cumene)	**0.77**	ppbv	0.67	0.34	1.34		02/17/12 22:58	98-82-8	
Methyl-tert-butyl ether	ND	ppbv	0.67	0.34	1.34		02/17/12 22:58	1634-04-4	
Naphthalene	ND	ppbv	0.67	0.34	1.34		02/17/12 22:58	91-20-3	
Toluene	**13.1**	ppbv	0.67	0.34	1.34		02/17/12 22:58	108-88-3	
m&p-Xylene	**7.8**	ppbv	1.3	0.67	1.34		02/17/12 22:58	179601-23-1	
o-Xylene	ND	ppbv	0.67	0.34	1.34		02/17/12 22:58	95-47-6	

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

QC Batch: AIR/14289
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR
Associated Lab Samples: 3062886002

METHOD BLANK: 1141709
Matrix: Air
Associated Lab Samples: 3062886002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.50	02/17/12 11:49	
Ethylbenzene	ppbv	ND	0.50	02/17/12 11:49	
Isopropylbenzene (Cumene)	ppbv	ND	0.50	02/17/12 11:49	
m&p-Xylene	ppbv	ND	1.0	02/17/12 11:49	
Methyl-tert-butyl ether	ppbv	ND	0.50	02/17/12 11:49	
Naphthalene	ppbv	ND	0.50	02/17/12 11:49	
o-Xylene	ppbv	ND	0.50	02/17/12 11:49	
Toluene	ppbv	ND	0.50	02/17/12 11:49	

LABORATORY CONTROL SAMPLE: 1141710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10	11.1	111	69-134	
Ethylbenzene	ppbv	10	10.5	105	69-139	
Isopropylbenzene (Cumene)	ppbv	10.4	10.0	97	70-130	
m&p-Xylene	ppbv	20	20.7	104	66-137	
Methyl-tert-butyl ether	ppbv	10	9.7	97	70-132	
Naphthalene	ppbv	10	14.3	143	57-150	CH
o-Xylene	ppbv	10	10.1	101	69-138	
Toluene	ppbv	10	11.5	115	71-132	

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

QC Batch: AIR/14294
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR
Associated Lab Samples: 3062886001

METHOD BLANK: 1142622 Matrix: Air
Associated Lab Samples: 3062886001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.50	02/20/12 10:24	
Ethylbenzene	ppbv	ND	0.50	02/20/12 10:24	
Isopropylbenzene (Cumene)	ppbv	ND	0.50	02/20/12 10:24	
m&p-Xylene	ppbv	ND	1.0	02/20/12 10:24	
Methyl-tert-butyl ether	ppbv	ND	0.50	02/20/12 10:24	
Naphthalene	ppbv	ND	0.50	02/20/12 10:24	
o-Xylene	ppbv	ND	0.50	02/20/12 10:24	
Toluene	ppbv	ND	0.50	02/20/12 10:24	

LABORATORY CONTROL SAMPLE: 1142623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10	11.9	119	69-134	
Ethylbenzene	ppbv	10	11.2	112	69-139	
Isopropylbenzene (Cumene)	ppbv	10.4	10.5	101	70-130	
m&p-Xylene	ppbv	20	22.1	110	66-137	
Methyl-tert-butyl ether	ppbv	10	10.5	105	70-132	
Naphthalene	ppbv	10	15.9	159	57-150	CH,L1
o-Xylene	ppbv	10	10.7	107	69-138	
Toluene	ppbv	10	12.2	122	71-132	

SAMPLE DUPLICATE: 1142929

Parameter	Units	10182855001 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ppbv	ND	ND		25	
Ethylbenzene	ppbv	ND	.43J		25	
Isopropylbenzene (Cumene)	ppbv	ND	ND		25	
m&p-Xylene	ppbv	ND	ND		25	
Methyl-tert-butyl ether	ppbv	ND	ND		25	
Naphthalene	ppbv	ND	ND		25	
o-Xylene	ppbv	ND	ND		25	
Toluene	ppbv	ND	.53J		25	

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QUALIFIERS

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

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-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 031 Route 119 Amoco
Pace Project No.: 3062886

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3062886001	**VP-5**	TO-15	AIR/14294		
3062886002	**VP-6**	TO-15	AIR/14289		

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client: PASI Pittsburgh
Phone: 724-850-5600

Lab Project Number: 10182909
Project Name: 3062886 Letterle & Associates

Lab Sample No: 3062886001 ProjSampleNum: 3062886001 Date Collected: 02/07/12 13:30
Client Sample ID: VP-5 Matrix: Air Date Received: 02/14/12 8:35

Parameters	Report Limit ppbv	Results ppbv	Report Limit mg/m3	Results mg/m3	DF	Analyzed	CAS No.
Air							
TO-15							
Benzene	0.9	2.6	0.0029	0.00844	1.8	02/20/12 14:53 CJR	71-43-2
Ethylbenzene	0.9	2.0	0.004	0.00883	1.8	02/20/12 14:53 CJR	100-41-4
Isopropylbenzene (Cumene)	0.9	ND	0.0045	ND	1.8	02/20/12 14:53 CJR	98-82-8
m&p-Xylene	1.8	5.7	0.0079	0.0252	1.8	02/20/12 14:53 CJR	179601-23-
Methyl-tert-butyl ether	0.9	ND	0.0033	ND	1.8	02/20/12 14:53 CJR	1634-04-4
Naphthalene	0.9	ND	0.0048	ND	1.8	02/20/12 14:53 CJR	91-20-3
o-Xylene	0.9	2.3	0.004	0.0102	1.8	02/20/12 14:53 CJR	95-47-6
Toluene	0.9	11.1	0.0034	0.0425	1.8	02/20/12 14:53 CJR	108-88-3

Lab Sample No: 3062886002 ProjSampleNum: 3062886002 Date Collected: 02/07/12 14:00
Client Sample ID: VP-6 Matrix: Air Date Received: 02/14/12 8:35

Parameters	Report Limit ppbv	Results ppbv	Report Limit mg/m3	Results mg/m3	DF	Analyzed	CAS No.
Air							
TO-15							
Benzene	0.67	1.3	0.0022	0.00422	1.34	02/17/12 22:58 CJR	71-43-2
Ethylbenzene	0.67	2.3	0.003	0.0102	1.34	02/17/12 22:58 CJR	100-41-4
Isopropylbenzene (Cumene)	0.67	0.77	0.0033	0.00385	1.34	02/17/12 22:58 CJR	98-82-8
m&p-Xylene	1.3	7.8	0.0057	0.0344	1.34	02/17/12 22:58 CJR	179601-23-
Methyl-tert-butyl ether	0.67	ND	0.0025	ND	1.34	02/17/12 22:58 CJR	1634-04-4
Naphthalene	0.67	ND	0.0036	ND	1.34	02/17/12 22:58 CJR	91-20-3
o-Xylene	0.67	ND	0.003	ND	1.34	02/17/12 22:58 CJR	95-47-6
Toluene	0.67	13.1	0.0026	0.0502	1.34	02/17/12 22:58 CJR	108-88-3

SUPPLEMENTAL REPORT

Units Conversion Request

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AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

05231

Page: 1 of 1

Section A Required Client Information:

Company: LeTeele + Associates LLC
Address: 2852 Oxford Blvd.
Allison Park PA 15101
Email To:
Phone: 412-486-0600 Fax: 412-487-0574
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name: RTe 119
Project Number: 031

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep. Rachel Christner
Pace Profile #:

Program: ~~AUST~~ Superfund Emissions Clean Air Act Voluntary Clean Up Dry Clean RCRA Other

Location of Sampling by State: PA

Reporting Units: ug/m³ mg/m³ X PPBV PPMV Other

Report Level: II. III. IV. Other

Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	'Section D' AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START / END/GRAB DATE	COLLECTED COMPOSITE START / END/GRAB TIME	COMPOSITE END DATE	COMPOSITE END TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: PM10	3C-Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	VP-5	6LC				2/7/12	13:30	-30	0	1764								X			30628864 001
2	VP-6	6LC				2/7/12	14:00	-31	0	1708								X			002

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Jared Thorn LeTeele	2/9/12		GR Pace	2-9-12	11:10
GR Pace	2-9-12	2:00	[signature]	2/9/12	1400

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
19.2	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jared Thorn

SIGNATURE of SAMPLER: Jared Thorn DATE Signed (MM / DD / YY): 2/9/12

ORIGINAL

APPENDIX C

Mann-Kendall Statistical Tests

State of Wisconsin
Department of Natural Resources
Remediation and Redevelopment Program

Mann-Kendall Statistical Test
Form 4400-215 (2/2001)

Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.

Site Name : Rt. 119 Amoco | BRRTS No. = | Well Number = MW-11

	Compound ->	Benzene	MTBE	Naphthalene			
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	5-Nov-09	921.00	334.00	148.00			
2	25-Mar-10	782.00	449.00	113.00			
3	25-Jun-10	310.00	168.00	21.60			
4	27-Aug-10	611.00	270.00	72.70			
5	20-Dec-10	764.00	236.00	91.50			
6	28-Jan-11	1,370.00	314.00	152.00			
7	9-May-11	453.00	202.00	41.30			
8	15-Jul-11	404.00	129.00	43.80			
9	9-Nov-11	929.00	295.00	150.00			
10	12-Jan-12	529.00	233.00	70.30			
	Mann Kendall Statistic (S) =	-5.0	-15.0	-3.0	0.0	0.0	0.0
	Number of Rounds (n) =	10	10	10	0	0	0
	Average =	707.30	263.00	90.42	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	315.939	91.677	48.545	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.447	0.349	0.537	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected					n<4	n<4	n<4
Trend ≥ 80% Confidence Level		No Trend	**DECREASING**	No Trend	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		No Trend	No Trend	No Trend	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		**CV <= 1 STABLE**	NA	**CV <= 1 STABLE**	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By = EI | Date = 6-Mar-12 | Checked By =

State of Wisconsin
Department of Natural Resources
Remediation and Redevelopment Program

Mann-Kendall Statistical Test
Form 4400-215 (2/2001)

Notice: This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.

Site Name : Rt. 119 Amoco | BRRTS No. = | Well Number = MW-12

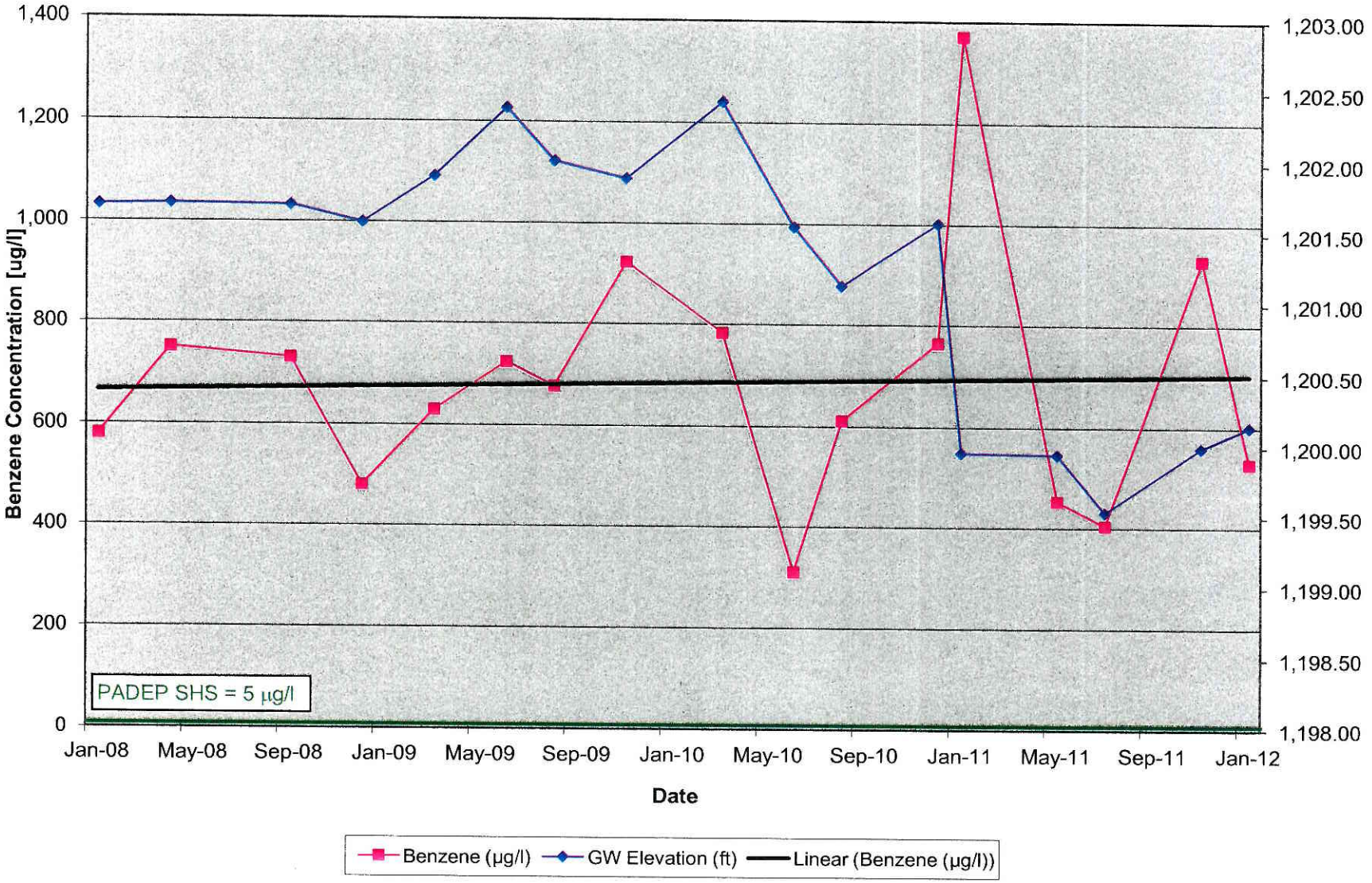
	Compound ->	Benzene	MTBE				
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	5-Nov-09	1.70	89.00				
2	25-Mar-10	0.50	144.00				
3	25-Jun-10	5.00	159.00				
4	27-Aug-10	39.70	361.00				
5	20-Dec-10	14.60	181.00				
6	28-Jan-11	89.20	314.00				
7	9-May-11	93.30	302.00				
8	15-Jul-11	76.10	217.00				
9	8-Nov-11	120.00	216.00				
10	12-Jan-12	44.70	298.00				
	Mann Kendall Statistic (S) =	29.0	17.0	0.0	0.0	0.0	0.0
	Number of Rounds (n) =	10	10	0	0	0	0
	Average =	48.48	228.10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Standard Deviation =	43.672	87.606	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.901	0.384	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected				n<4	n<4	n<4	n<4
Trend ≥ 80% Confidence Level		INCREASING	INCREASING	n<4	n<4	n<4	n<4
Trend ≥ 90% Confidence Level		INCREASING	INCREASING	n<4	n<4	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	n<4 n<4	n<4 n<4	n<4 n<4	n<4 n<4

Data Entry By = EI | Date = 6-Mar-12 | Checked By =

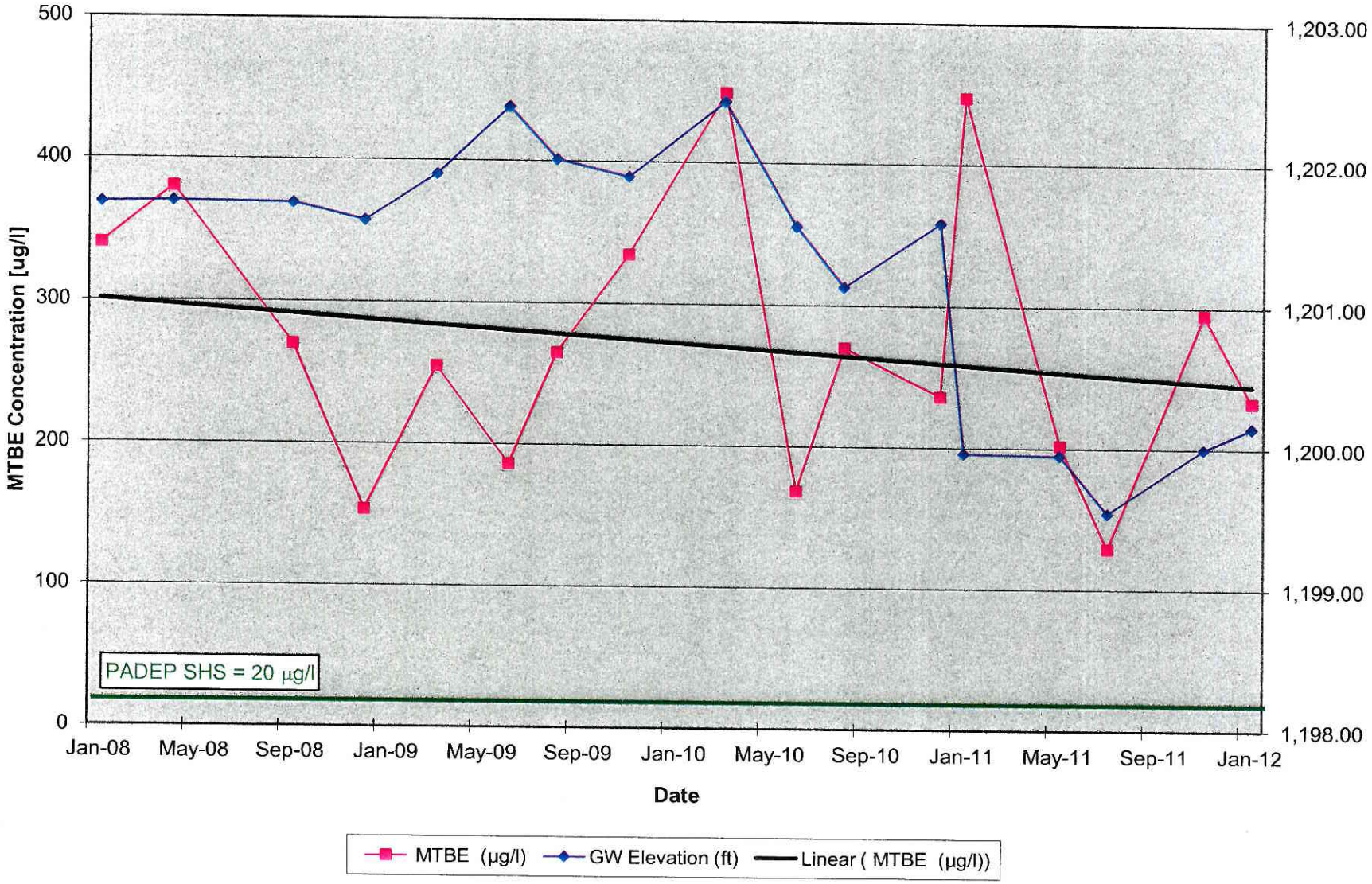
APPENDIX D

Benzene/MTBE/Naphthalene versus Groundwater Elevation Trend Graphs

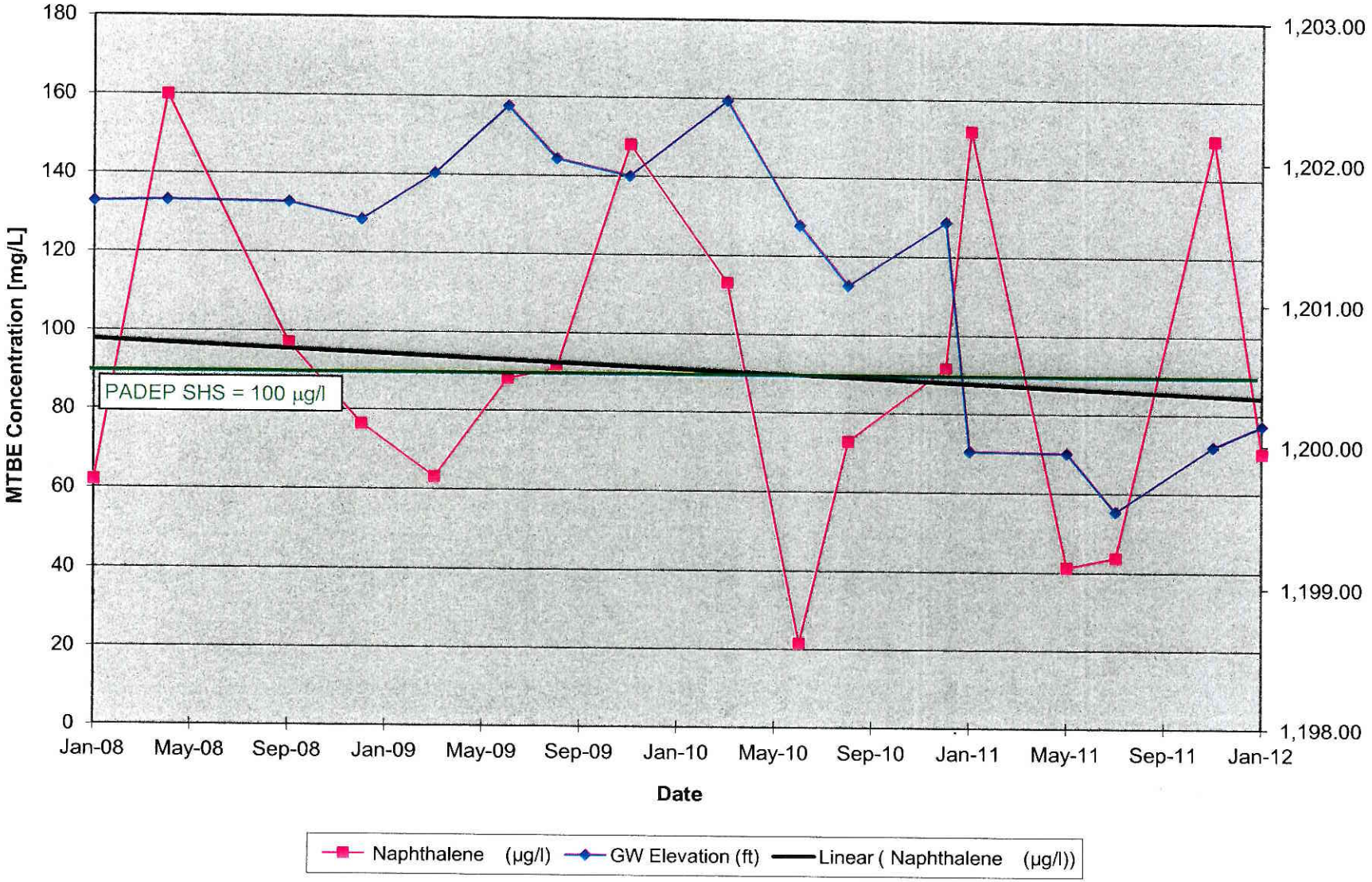
Rt. 119 Amoco - Dunbar, Pennsylvania
Benzene Concentration and Groundwater Elevation Change Over Time in MW-11



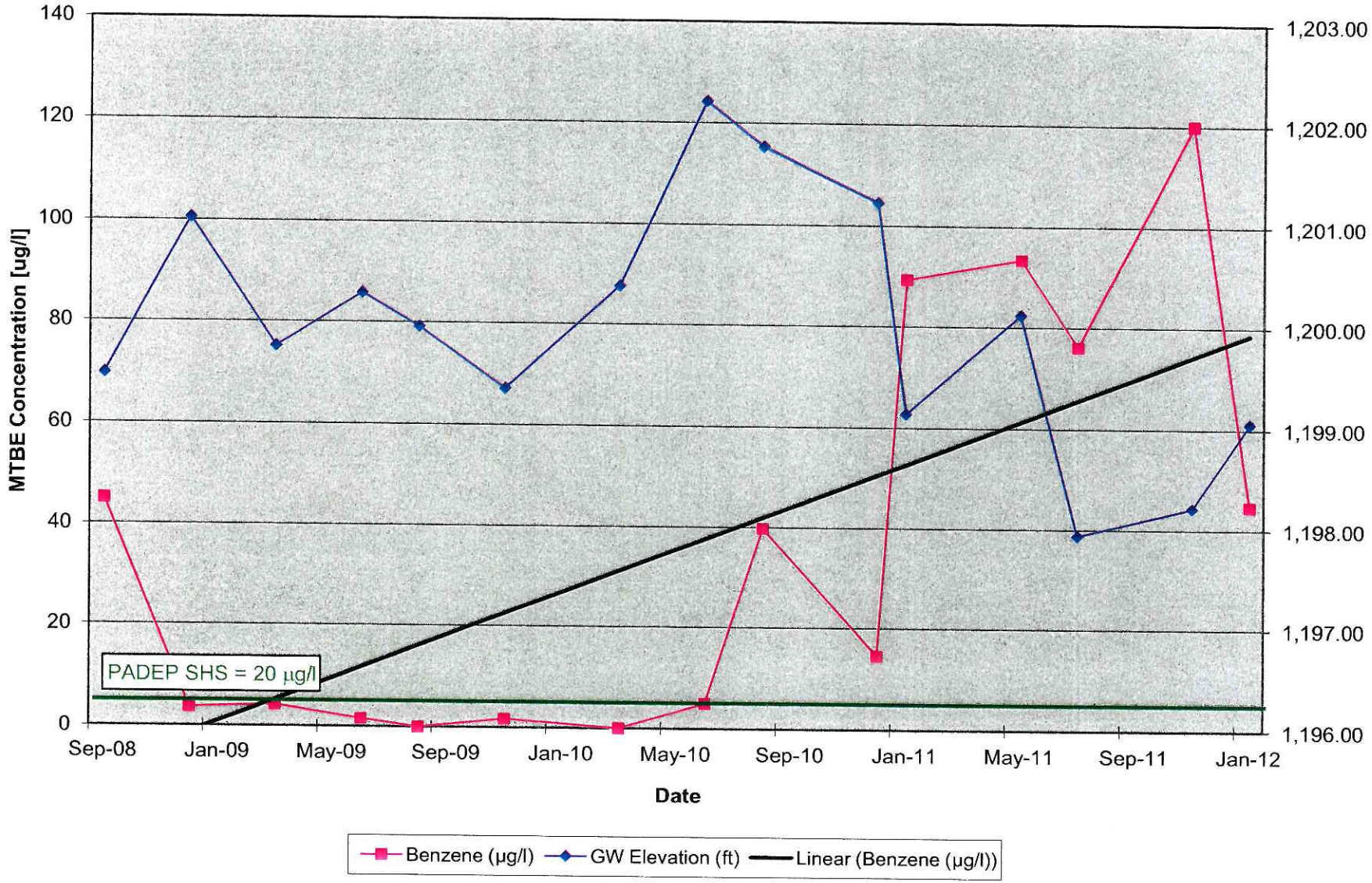
Rt. 119 Amoco - Dunbar, Pennsylvania
MTBE Concentration and Groundwater Elevation Change Over Time in MW-11



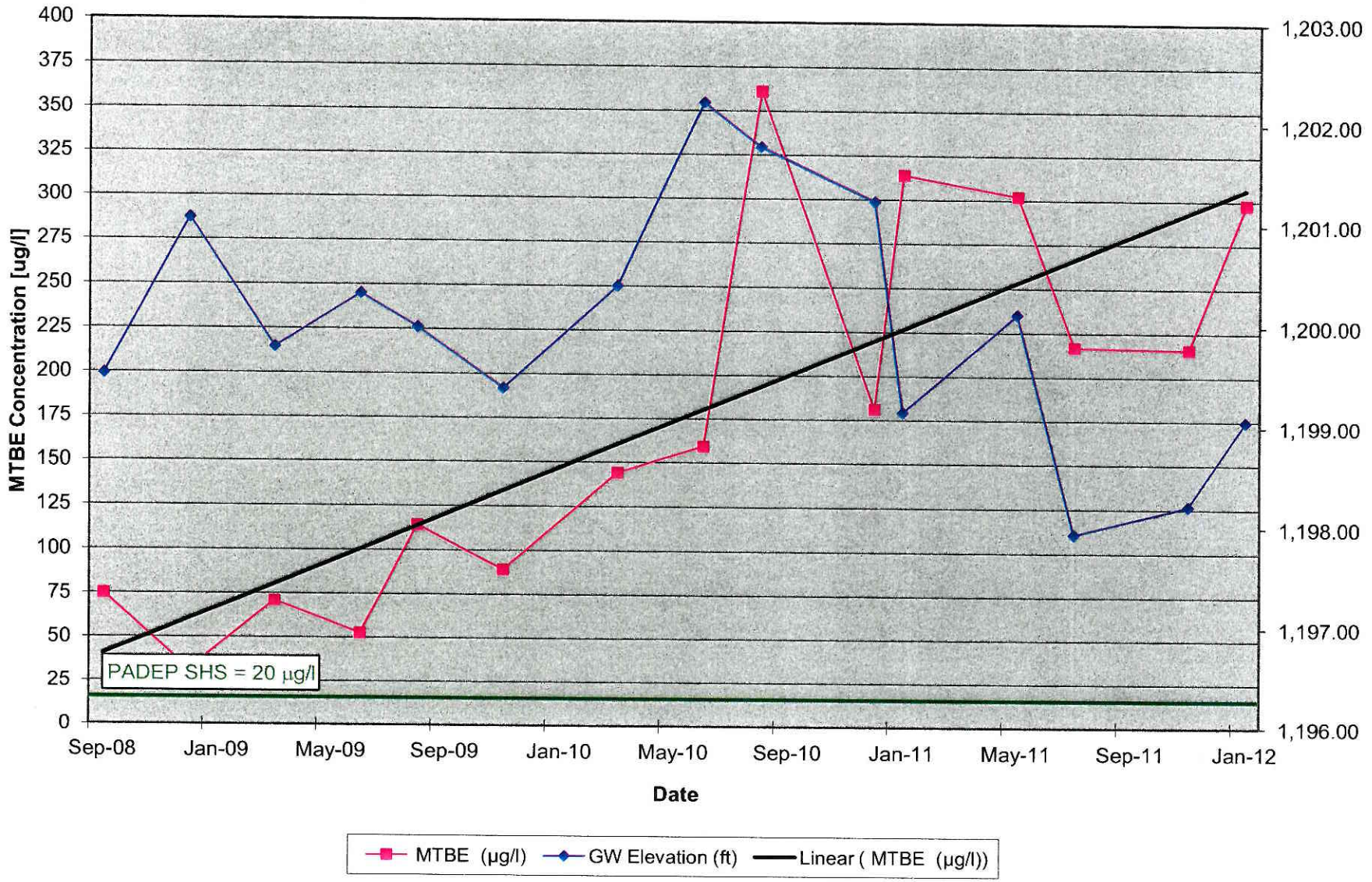
Rt. 119 Amoco - Dunbar, Pennsylvania
Naphthalene Concentration and Groundwater Elevation Change Over Time in MW-11



Rt. 119 Amoco - Dunbar, Pennsylvania
Benzene Concentration and Groundwater Elevation Change Over Time in MW-12



Rt. 119 Amoco - Dunbar, Pennsylvania
MTBE Concentration and Groundwater Elevation Change Over Time in MW-12



APPENDIX E

Pilot Test Report

PILOT TEST REPORT

PADEP Facility ID #26-18711
PAUSTIF Claim #1996-0116 (F)
Former Route 119 Amoco
1809 University Drive
Dunbar, Pennsylvania 15431

Prepared for:

Mr. & Mrs. Tim Shell
202 Center Wood Circle
Uniontown, Pennsylvania 15401

Prepared by:

Letterle & Associates, LLC
2859 Oxford Boulevard, Suite 110
Allison Park, Pennsylvania 15101

Kenneth W. Dudash, P.E.
Senior Project Engineer

March 2012

"By affixing my seal to this document, I am certifying that the information is true and correct to the best of my knowledge. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information."

Kenneth W. Dudash, P.E. (signed and sealed this day (March 6, 2012))

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1.0 INTRODUCTION

Letterle & Associates, LLC (Letterle) was retained in August 2005 by Mr. & Mrs. Timothy Shell (Shell's) to complete environmental site characterization and remedial action at the former Route 119 Amoco (Rt. 119 site) located at 1809 University Drive (79.6464° W longitude, 39.9677° N latitude) in Dunbar, Pennsylvania. Mr. Mick McGwire is the current owner of the property, which is currently a used automobile dealership named Summit Motors Used Cars Plus. The Shells and Mr. Ron Hall (Hall) previously owned the property and the former underground storage tank (UST) system at the site. An environmental site characterization was initiated in May 1996 when a release of gasoline was reported to the Pennsylvania Department of Environmental Protection (PADEP) as a result of leaking swing joints and coupler connections along the underground pipelines from the USTs to the dispensers.

In January 2012, the PADEP requested that a short-term remedial pilot test be conducted on on-site monitor well MW-11 in order to evaluate alternative remedial strategies on-site and off-site and to install additional soil vapor monitor points at the off-site Martin residence.

Letterle performed remedial pilot testing at the former State Route (SR) 119 Amoco (site) on February 9, 2012. Pilot test activities were conducted in order to assess the applicability of groundwater extraction in conjunction with soil vapor extraction (SVE) to remediate hydrocarbon-impacted groundwater at the site, specifically in on-site monitor wells MW-10 and MW-11 and off-site monitor well MW-12. The pilot test involved the simultaneous recovery of subsurface vapor and groundwater from a designated extraction well (MW-11), while monitoring water table drawdown and induced vacuum in surrounding monitor wells.

1.1 Pilot Test Methodology

Groundwater quality data obtained during quarterly monitoring activities indicates that petroleum compounds remain in the groundwater. The basic lithology beneath the surface of the site consists of unconsolidated materials and soil to approximately seven feet below ground surface (bgs), where weathered shale was encountered overlying competent shale bedrock. Groundwater was generally encountered between 35 to 37 feet bgs in the fractured bedrock on-site. The apparent groundwater flow direction in the bedrock aquifer is generally to the west-northwest with local mounding in the vicinity of monitor well MW-10, and to the west-southwest off-site to the west of the site. The unleaded gasoline constituents have been distributed within the bedrock aquifer to the southwest of the UST system (MW-11, MW-12, and MW-13).

A pilot test was performed in order to evaluate remediation strategies that would remove the dissolved-phase hydrocarbons in bedrock groundwater. Specifically, the pilot test was conducted in order to determine the following:

- An effective remediation strategy;
- If de-watering the aquifer would increase recovery of hydrocarbons;
- The vapor pneumatic radius-of-influence (ROI), groundwater capture zone, and hydrocarbon recovery rate using the chosen technology; and
- Collect additional information to design an effective remediation strategy.

The pilot test was conducted utilizing two remediation strategies, SVE and total phase extraction (TPE). SVE systems typically utilize blowers to produce a vacuum at extraction wells, which are screened

above the water table. The applied vacuum induces migration of hydrocarbon-laden vapor through open pore space in the subsurface. This vapor movement allows adsorbed hydrocarbons to volatilize into the vapor stream for recovery. Additionally, aerobic bioremediation is enhanced with SVE technology, which elevates oxygen concentrations in the subsurface.

TPE combines groundwater recovery with SVE technology. Soil vapor and groundwater are simultaneously recovered via a single drop tube. A high-vacuum liquid ring or rotary claw pump is utilized to produce a high vacuum in the well via a drop tube, which removes the groundwater and vapor at the bottom of the drop tube. Soil vapor is removed from the well and through the well casing screened volume. Groundwater also enters through the screen from the surrounding subsurface and is combined with soil vapor as both are extracted through the drop tube. As the water table is drawn down by groundwater extraction, the previously saturated bedrock becomes exposed, and can then be remediated by the SVE. The vacuum that is applied to the subsurface removes the hydrocarbon vapors from the unsaturated bedrock pore spaces while also drawing in oxygen-laden clean air from non-impacted areas. Volatilization of hydrocarbons is increased with the vapor movement and bioremediation of hydrocarbons is also increased with the influx of additional oxygen. Since adsorbed hydrocarbons can be "smeared" by naturally fluctuating water tables, it is often advantageous to de-water an aquifer in conjunction with SVE so that the entire adsorbed hydrocarbon profile can be remediated.

Vapor enhanced groundwater extraction (VEGE) remediation systems, like TPE, combine groundwater recovery with SVE technology; however, groundwater is extracted via an installed submersible pump. The pump is required to extract groundwater at sites with aquifers deeper than approximately 25 feet bgs. Subsurface vapor is recovered via some form of vacuum pump or blower. The pump or blower produces a vacuum on the well, at which time vapor is removed from the well and through the well casing screened interval. Groundwater also enters through the well screen from the surrounding subsurface and is removed to the level of the groundwater pump inlet.

TPE systems, which typically utilize one extraction mechanism for both soil vapor and groundwater recovery, offer an extremely effective and timely approach to site remediation when impacted groundwater is relatively shallow (<25 feet bgs) and the bedrock composition is not readily conducive to pumping or vapor extraction. VEGE systems work regardless of the depth to groundwater, since they incorporate submersible pumps, yet are still "total-phase" systems. These systems essentially incorporate two remediation strategies into one combined unit, offering the benefits of different technologies.

2.0 VEGE PILOT TEST – MW-11

On February 9, 2012, a VEGE test was performed on MW-11 to investigate aquifer characteristics in bedrock at the site. A pneumatic submersible groundwater pump (Clean Environment Equipment Model AP-2) was inserted into the well to allow for simultaneous groundwater and vapor extraction. A self-regulating pump operated when water was present in the recovery well. The groundwater pump was installed to a depth of 49 feet bgs through a sanitary well seal, and a 3-horsepower Rotron regenerative blower was connected to MW-11 for vapor extraction.

Automatic recording pressure transducers were installed in the monitor wells MW-3, MW-10, and MW-12 to record groundwater fluctuations closest to the extraction well. Vacuum readings could not be

obtained due to the transducers in the wells. An ORS™ electronic interface probe accurate to the nearest 0.01 foot was used to monitor the water levels within monitor wells MW-4, MW-8, and MW-13 through MW-17. The vapor stream velocity was calculated in standard feet per minute (scfm) periodically during the test using the manufacturer's performance curves at the produced vacuum level. Prior to starting the test, static groundwater elevations were recorded (**Table 1**). These measurements were obtained in order to provide base-line data in which to compare monitor well open screened intervals and subsequent readings for a hydraulic capture zone calculation.

The groundwater drawdown measurements at the observation wells and their distances to the extraction well were used to determine an approximate minimum hydraulic capture zone to ensure hydraulic control from the site. Capture zone estimates were interpreted by groundwater drawdown measurements. Observed groundwater level drawdown measurements versus radial distance of the observation wells from the extraction well were inserted into the aquifer software program Infinite Extent™. The program plotted the data on a semi-log graph and an estimated trend line was overlaid on the connected data points. The distance at which the trend line intersects the drawdown level of 0.1 feet is the calculated capture zone. The calculated distance of the capture zone provides a base point for maximum distance between potential recovery well locations.

The VEGE pilot test was conducted for six hours. During this time, the blower was operated at a maximum attainable vacuum, while the pump was installed near the bottom of the well to determine vapor and groundwater flow rate versus applied vacuum. A vapor sample was collected at the end of the test to determine if the water table drawdown resulted in the removal of volatile organic compounds (VOCs). The vapor stream was also periodically screened for VOCs using a hand-held photoionization detector (PID).

During the pilot test, pressure transducers (Schlumberger MicroDiver®) in surrounding monitor wells MW-3, MW-10, and MW-12 recorded depth to water fluctuations. In addition, monitor wells MW-4, MW-8, MW-13, MW-14S, MW-15S, MW-16, and MW-17 were monitored with a magnehelic pressure gauge to record vacuum levels. Data obtained from monitoring the vacuum influence at the observation wells was used to obtain an approximate pneumatic ROI.

The pneumatic ROI is the transient pressure distribution created by the vacuum that results in an area in which the air velocity through the bedrock decreases to the point in which the contaminants will not volatize. The ROI is measured in resulting inches of water (in H_2O) vacuum. Generally, at levels of vacuum below 0.1 in H_2O, volatilization is limited due to a lack of subsurface vapor flow. The distance from the extraction point at which 0.1 H_2O is observed is the industry standard for the extent of the pneumatic ROI.

2.1 VEGE Pilot Test Results – MW-11

Initial groundwater gauging activities on February 9, 2012 indicated that the depth to groundwater ranged from 12.13 feet bgs in unconsolidated monitor well MW-14S to 45.22 feet bgs in bedrock monitor well MW-16. With the air powered submersible pump installed at a depth of 49 feet bgs, blower operation resulted in a vacuum of 60 in H_2O and an extracted vapor flow rate of 90 scfm. The groundwater pump was energized with 70 psi of air pressure to recover approximately 0.83 gpm during the testing. The water table drawdown in the test well was not gauged due to limited access through the well. Since the pump did not stop during the test and pumped at regular pulsed intervals, it is believed

the water column was not drawn down to the depth of the pump. A total of 300 gallons were extracted from MW-11 during the VEGE test.

Monitor wells MW-3, MW-4, MW-10, MW-12, and MW-13 exhibited groundwater drawdown; however, upgradient monitor well MW-8 and downgradient monitor wells at a distance greater than 200 feet exhibited no response. MW-12 and MW-13 exhibited groundwater table drawdown during the VEGE test with a maximum drawdown of 0.21 feet and 0.25 feet, respectively. MW-13 is located 148 feet downgradient from the extraction well.

A significant vacuum influence (>0.10 in H_2O) was not observed in any monitor wells during the testing on MW-11 (**Table 2**). Well screen was not exposed in many of the observed monitor wells. The closest monitor well to MW-11 without a transducer is MW-4 at a distance of 81 feet. Field data is presented in **Appendix A**. A summary of the pilot test results is presented in **Table 4**.

A groundwater influent sample was collected from the groundwater recovery system at the end of the test on MW-11 and analyzed for BTEX and MTBE. The analytical results for the samples indicated that the extracted groundwater contained BTEX and MTBE during the pilot test, indicating that VEGE will have a positive effect in removing hydrocarbons from the subsurface. The laboratory analytical results for the groundwater samples are presented in **Table 5** and included in **Appendix B**.

Field analysis of extracted vapor indicated a decrease of petroleum constituents from 33.6 ppmv at the start of the test to 12.9 ppmv at the end of the test. A vapor sample was also collected at the end of the test and analyzed for BTEX and MTBE. The laboratory results for the vapor sample indicated that BTEX and MTBE hydrocarbons were not detected in the vapor from MW-11 (**Table 6**).

A hydraulic capture zone of 78 feet was calculated using the groundwater drawdown recordings (**Figure 1**). Capture zone calculations are included in **Attachment C**. A pneumatic ROI could not be calculated due to the lack of vacuum response in the monitor wells.

3.0 CONCLUSION

The results of the pilot test depict a representation of the site's bedrock aquifer hydraulic and pneumatic properties. During the VEGE pilot test on MW-11, the bedrock aquifer yield was approximately 0.83 gpm under an applied vacuum of 60 in H_2O after six hours of extraction. A vapor extraction rate of 90 scfm at 60 in Hg is obtainable during the extraction of the water table, which will result in a groundwater capture zone of 78 feet. A pneumatic ROI could not be calculated due to the lack of vacuum response in the monitor wells. The aquifer yield and groundwater capture zone calculated from the test on MW-11 reveals an accurate representation of the hydraulic and pneumatic properties and capabilities of the bedrock at the site. The installed depth of MW-11 provides an adequate column of water (12.2 feet) that when extracted, results in a large cone of groundwater depression, which in turn results in the large influence area.

Groundwater drawdown was not observed in upgradient monitor well MW-8 or in downgradient monitor wells MW-14S, MW-15S, MW-16, and MW-17. Since MW-11 is a 2-inch diameter well, it is reasonable to assume that a 4-inch diameter well would yield a higher flowrate and a larger hydraulic capture zone and possible pneumatic ROI, provided the groundwater can be drawn down to the bottom of the well (50 feet bgs). Therefore, Letterle suggests that a four-inch diameter recovery well be installed

at the location of MW-11 before any future FSR events are conducted. The results also indicate that a high vacuum may need to be applied to the VEGE system augmented by pneumatic pumps to realize the pneumatic ROI. VEGE would be an effective and aggressive remediation strategy in the bedrock areas of the plume to reduce adsorbed and dissolved phase petroleum hydrocarbons in subsurface bedrock and groundwater.

TABLES

TABLE 1
INITIAL DEPTH TO GROUNDWATER
Former SR 119 Amoco
1809 University Drive
Dunbar, PA
February 9, 2012

VEGE Test on MW-11

Observation Well I.D.	Depth to Screen (feet)	Length of Screen (feet)	Static Depth to Water (feet)	Exposed Screen (feet)	Screen in Saturated Zone (feet)
MW-3	16.00	20.00	**	--	--
MW-4	31.00	20.00	34.90	3.90	16.10
MW-8	36.00	15.00	37.04	1.04	13.96
MW-10	35.00	15.00	**	--	--
MW-11	35.00	15.00	36.08	1.08	13.92
MW-12	30.00	15.00	**	--	--
MW-13	35.00	15.00	33.00	0.00	15.00
MW-14	15.00	15.00	12.13	0.00	15.00
MW-15	15.00	15.00	13.38	0.00	15.00
MW-16	45.00	15.00	45.22	0.22	14.78
MW-17	40.00	15.00	39.14	0.00	15.00

Notes:
** Transducer collection

TABLE 2
VACUUM INFLUENCE READINGS
Former SR 119 Amoco
1809 University Drive
Dunbar, PA
February 9, 2012

Pilot Test on MW-11

Observation Well ID	Distance from MW-11 (feet)	Vacuum at Observation Well (inH_2O) with MW-11 During TPE Test @ 60 in H_2O, 90 scfm, & 0.83 gpm
MW-4	81	0.00
MW-8	111	0.00
MW-13	148	0.00
MW-14	212	0.00
MW-15	240	0.00
MW-16	240	0.00
MW-17	213	0.00

Notes:
in H_2O - inches of water
inHg - inches of mercury
scfm - standard cubic feet per minute
gpm - gallons per minute

TABLE 3
PILOT TEST SUMMARY
Former SR 119 Amoco
1809 University Drive
Dunbar, PA
February 9, 2012

VEGE Test on MW-11

Applied Vac. At Wellhead (inH_2O)	Depth of Pump (feet)	Induced Vac. To Subsurface (inH_2O)	Groundwater Recovery Rate (gpm)	Vapor Flow (scfm)
60.0	49.00	60.0	0.83	90

Estimated Pneumatic Radius of Influence (feet)	Calculated Groundwater Capture Zone (feet)	Field PID Hydrocarbon Concentration (ppm)	Water Table Elevation Change (feet)
0	78.00	33.6	UNKNOWN

Notes:
inHg - inches of mercury
inH_2O - inches of water
scfm - standard cubic feet per minute
ppm - parts per million
gpm - gallons per minute

TABLE 4
GROUNDWATER GAUGING DATA
Former SR 119 Amoco
1809 University Drive
Dunbar, PA
February 9, 2012

VEGE Test on MW-11

Observation Well I.D.	Distance From MW-11 (feet)	DTW before Extraction (feet bgs)	DTW after 360 Minutes of Extraction (feet bgs)	Water Table Drawdown (feet)
MW-3	69	**	**	0.12
MW-4	81	34.90	35.10	0.20
MW-8	111	37.04	37.07	0.03
MW-10	42	**	**	0.30
MW-11	119	36.08	**	***
MW-12	86	**	**	0.21
MW-13	148	33.00	33.25	0.25
MW-14	212	12.13	12.10	0.00
MW-15	240	13.38	13.32	0.00
MW-16	240	45.22	45.24	0.02
MW-17	213	39.14	39.14	0.00

Notes:
** Transducer Monitored
*** unknown

TABLE 5
GROUNDWATER QUALITY ANALYTICAL RESULTS
Former SR 119 Amoco
1809 University Drive
Dunbar, Pa
February 9, 2012

Sample I.D. Influent	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)
MW-11 End	75.3	3	36	9	80.8

Notes:
µg/l - micrograms per liter

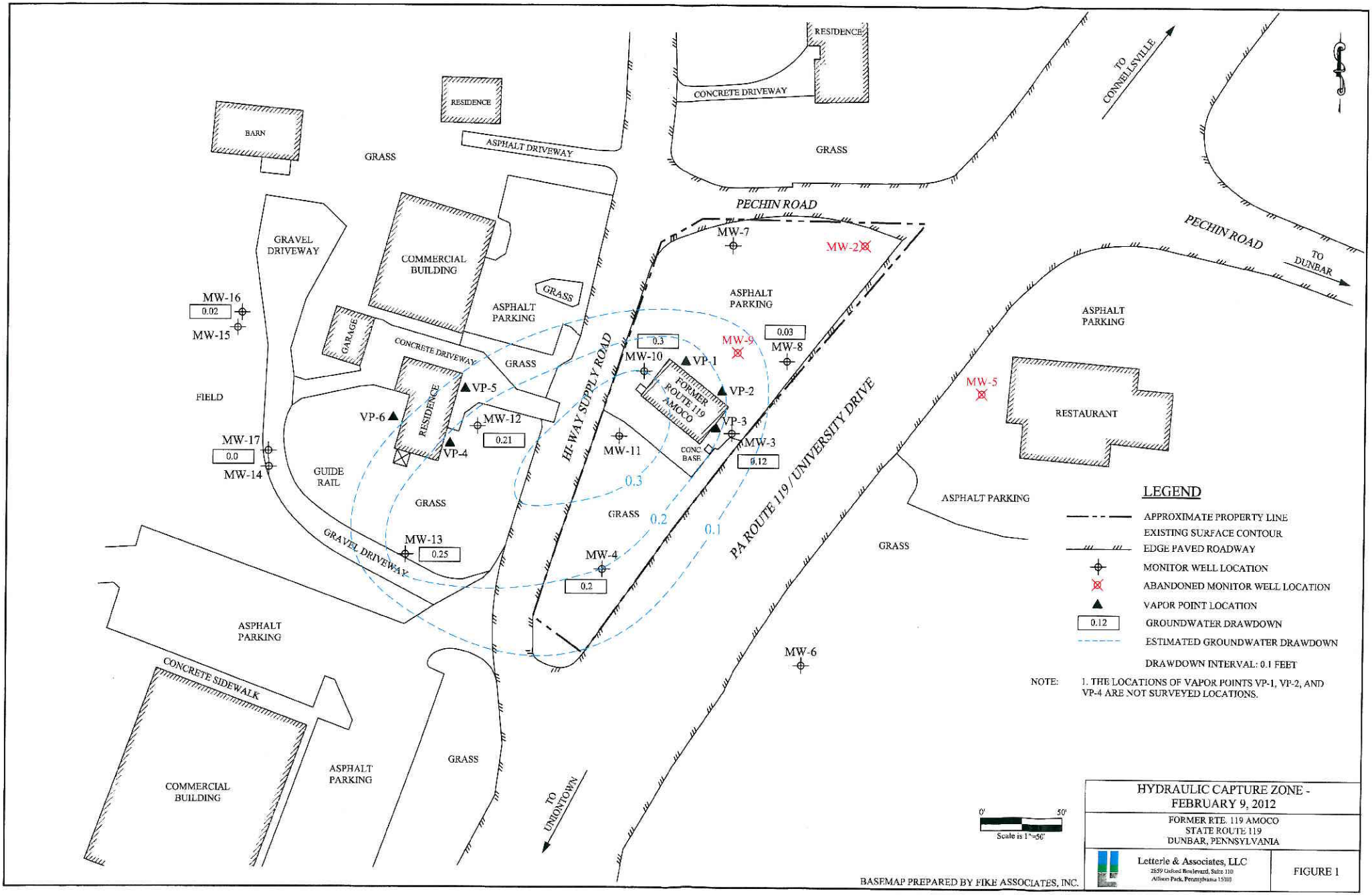
TABLE 6
VAPOR QUALITY ANALYTICAL RESULTS
Former SR 119 Amoco
1809 University Drive
Dunbar, PA
February 9, 2012

VEGE Test on MW-11

Extraction Well	Benzene (ppmv)	Toluene (ppmv)	Ethylenzene (ppmv)	Xylenes (ppmv)	MTBE (ppmv)	Cumene (ppmv)
MW-11 End	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07

Notes:
ppmv - parts per million volume

FIGURE


RESIDENCE
CONCRETE DRIVEWAY
TO CONNELLSVILLE
BARN
RESIDENCE
GRASS
ASPHALT DRIVEWAY
GRASS
PECHIN ROAD
PECHIN ROAD
TO DUNBAR
GRAVEL DRIVEWAY
COMMERCIAL BUILDING
GRASS
ASPHALT PARKING
MW-7
MW-2
ASPHALT PARKING
MW-16
0.02
MW-15
GARAGE
CONCRETE DRIVEWAY
GRASS
0.3
MW-9
0.03
MW-8
MW-10
VP-1
VP-2
VP-5
FIELD
VP-6
RESIDENCE
MW-12
0.21
VP-4
FORMER ROUTE 119 AMOCO
VP-3
MW-3
0.12
MW-17
0.0
MW-14
MW-11
CONC BASE
HI-WAY SUPPLY ROAD
PA ROUTE 119 / UNIVERSITY DRIVE
GUIDE RAIL
GRASS
0.3
0.2
0.1
GRASS
MW-13
0.25
MW-4
0.2
GRAVEL DRIVEWAY
ASPHALT PARKING
MW-6
CONCRETE SIDEWALK
COMMERCIAL BUILDING
ASPHALT PARKING
GRASS
TO UNIONTOWN
MW-5
RESTAURANT
ASPHALT PARKING
ASPHALT PARKING
GRASS
LEGEND
APPROXIMATE PROPERTY LINE
EXISTING SURFACE CONTOUR
EDGE PAVED ROADWAY
MONITOR WELL LOCATION
ABANDONED MONITOR WELL LOCATION
VAPOR POINT LOCATION
0.12 GROUNDWATER DRAWDOWN
ESTIMATED GROUNDWATER DRAWDOWN
DRAWDOWN INTERVAL: 0.1 FEET
NOTE: 1. THE LOCATIONS OF VAPOR POINTS VP-1, VP-2, AND VP-4 ARE NOT SURVEYED LOCATIONS.
0'
50'
Scale is 1"=50'
BASEMAP PREPARED BY FIKE ASSOCIATES, INC.
HYDRAULIC CAPTURE ZONE - FEBRUARY 9, 2012
FORMER RTE. 119 AMOCO
STATE ROUTE 119
DUNBAR, PENNSYLVANIA
Letterle & Associates, LLC
2859 Oxford Boulevard, Suite 110
Allison Park, Pennsylvania 15101
FIGURE 1

APPENDIX A

VEGE Pilot Test Data – Event Summary Sheet

PILOT TEST EVENT SUMMARY

SITE: Rt. 119 Amoco

DATE: 2/9/2012

Field Staff: Thorn/Peck

Extraction Well: MW-11

SYSTEM START TIME: 11:30

SYSTEM FINISH TIME: 17:30

ELAPSED TIME: 6 hours

GROUNDWATER GAUGING DATA
ELAPSED TIME (IN HRS.)

Well	Time / Elapsed Time	12:30 1:00	13:00 1:30	13:30 2:00	14:00 2:30	14:30 3:00	15:30 4:00	16:30 5:00	17:30 6:00	Total Drawdown
MW-3	Collected data with MicroDiver									
MW-4	34.90	34.90	34.90	34.90	34.90	34.95	35.00	35.03	35.10	0.20
MW-6	No data collected - Well located across Rt. 119									
MW-7	No data collected - Van parked over well									
MW-8	37.04	37.04	37.04	37.04	37.04	37.04	37.05	37.06	37.07	0.03
MW-10	Collected data with MicroDiver									
MW-11	36.80	Extraction Well								--
MW-12	Collected data with MicroDiver									
MW-13	33.00	33.00	33.00	33.01	33.02	33.09	33.16	33.21	33.25	0.25
MW-14	12.13	12.13	12.13	12.12	12.10	12.10	12.10	12.10	12.10	-0.03
MW-15	13.38	13.38	13.34	13.34	13.32	13.32	13.32	13.32	13.32	-0.06
MW-16	45.22	45.22	45.22	45.22	45.22	45.22	45.24	45.24	45.24	0.02
MW-17	39.14	39.14	39.14	39.14	39.14	39.14	39.14	39.14	39.14	0.00
Vacuum	60	60	60	60	60	60	60	60	60	
Compressor	70	70	70	70	70	70	70	70	70	
PID	33.6	31.9	21	13.6	13.3	13.3	13.5	13.9	13.9	
Totalizer	--	--	--	--	--	--	--	--	--	~300 gal

VACUUM GAUGING DATA
ELAPSED TIME (IN HRS.)

Well	1:00	2:00	3:00	4:00	5:00	6:00
MW-4	0	0	0	0	0	0
MW-8	0	0	0	0	0	0
MW-13	0	0	0	0	0	0
MW-14	0	0	0	0	0	0
MW-15	0	0	0	0	0	0
MW-16	0	0	0	0	0	0
MW-17	0	0	0	0	0	0

	TIME
Initial GW Sample	--
Final GW Sample	17:30
Initial Vapor Sample	--
Final Vapor Sample	17:20
Pump Depth (from TOC)	49 ft

APPENDIX B

Laboratory Analytical data

VAPORTECH
Services, Inc.

Analytical Laboratory & Geoprobe Sampling

2/13/2012

Mr. Nate Croasmun
Letterle and Associates, LLC
2859 Oxford Blvd, Suite 110
Allison Park, PA 15101

Dear Nate:

Enclosed are the sample data report, chain of custody record and quality control data for the sample(s) received on February 10, 2012 for your project; 031 - Route 119.

Please give me a call if you have questions or I can be of further assistance. Thank you for using Vaportech Services.

Sincerely,

David J. Masdea

Enclosure:

1158 Pittsburgh Road • Suite 201 • Valencia, PA 16059
Tel.: 724-898-2622 • Fax: 724-898-2633

Vaportech Services, Inc.

LET963-2100

Letterle and Associates, LLC
Project: 031 - Route 119

CONCENTRATIONS IN PPMV

COMPOUND	MW-11 INFLUENT	PQL
MTBE	ND	0.07
BENZENE	ND	0.07
TOLUENE	ND	0.07
ETHYL BENZENE	ND	0.07
M&P XYLENE	ND	0.07
O-XYLENE	ND	0.07

FILE NAME	V71A.444.BND
DATE SAMPLED	02/09/12
DATE RECEIVED	02/10/12
DATE ANALYZED	02/10/12

PQL - denotes lower 'Practical Quantitation Limit'
ND - 'Not Detected' at or above the lower practical quantitation limit

13-Feb-12

Reviewed by:

Vaportech Services, Inc.

Letterle and Associates, LLC
Quality Control
Laboratory Project(s): 2100

CONCENTRATIONS IN PPMV

CONTINUING CALIBRATION CHECK

STANDARDS: STD 21V R4 PA-BTEX-H
FILE NAME: V71A.434.BND V71A.443.BND
DATE ANALYZED: 02/10/12 02/10/12

COMPOUND	KNOWN (PPMV)	RESULT (PPMV)	PERCENT DIFFERENCE
MTBE	50.33	50.59	0.51
BENZENE	1.25	1.19	4.80
TOLUENE	1.06	1.00	5.75
ETHYL BENZENE	0.92	0.88	4.24
M&P XYLENE	1.84	1.77	3.86
O-XYLENE	0.92	0.90	2.50

LABORATORY BLANK RESULTS

BLANK: N2 IN VIAL
FILE NAME: V71A.433.BND
DATE ANALYZED: 02/10/12

COMPOUND	BLANK (PPMV)	PRACTICAL QUANTITATION LIMIT (PPMV)
MTBE	ND	0.07
BENZENE	ND	0.07
TOLUENE	ND	0.07
ETHYL BENZENE	ND	0.07
M&P XYLENE	ND	0.07
O-XYLENE	ND	0.07

ND - 'Not Detected' at or above the lower practical quantitation limit

13-Feb-12

Reviewed by: 

LET 963-2100

CHAIN-OF-CUSTODY RECORD

VAPORTECH Services, Inc.
1158 Pittsburgh Road • Suite 201 • Valencia, PA 16059
Tel: 724-898-2622 • Fax: 724-898-2633

Company Name: LETTERLE AND ASSOCIATES
Address: 2859 OXFORD BLVD
City: ALLISON PARK State: PA Zip: 15101
Proj. Manager: NATE CROASMUN
Proj. Location: ROUTE 119
Proj. Number: 031
Phone #: 412-486-0600 Fax #:
Sampler's signature:

Analysis Options: Enter letters in Requested Analysis columns below.

A	Light Hydrocarbons	F	BTEX
B	Permanent Gases	G	BTEX & C5 - C10
C	Methane	H	TPH (C4 - C12 range)
D	Methane, Ethane, Ethylene	I	Chlorinated Hydrocarbons
E	Hydrogen	J	624 Compound List

Light Hydrocarbons: Methane, Ethane, Ethylene, Propane, Propylene, iso-Butane, n-Butane
Permanent Gases: Carbon Dioxide, Oxygen, Nitrogen, Methane, Carbon Monoxide
BTEX: Benzene, Toluene, Ethyl Benzene, m & p -Xylene, o-Xylene
C5-C10: Pentane, Hexane, Heptane, Octane, Nonane, Decane
Chlorinated HC: 1,1-DCE, 1,1-DCA, Methylene Chloride, trans-1,2-DCE, cis-1,2-DCE, Chloroform 1,1,1-TCA, Carbon Tetrachloride, Trichloroethylene (TCE), Tetrachloroethylene (PCE)

Collection Date	Collection Time	Number of Containers	Sample Type	Sample Identification	Requested Analysis				(Other)	Remarks
2/9/2012	1720	1	VAPOR	MW-11 INFLUENT	F				MTBE	

Results to : NATE CROASMUN

Invoice to :

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
				Monroe	Vaportech	2-10-12	1300
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Laboratory to return. YELLOW COPY : Laboratory PINK COPY : Submitter

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

February 21, 2012

Mr. Mark Valenty
Letterle & Associates
2859 Oxford Boulevard
Suite 110
Allison Park, PA 15101

RE: Project: 031 RTe 119
Pace Project No.: 3063004

Dear Mr. Valenty:
Enclosed are the analytical results for sample(s) received by the laboratory on February 10, 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,

Rachel D Christner

Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 031 RTe 119
Pace Project No.: 3063004

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
Virginia VELAP (Cert # 460198)
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 031 RTe 119
Pace Project No.: 3063004

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3063004001	MW-11 Effluent	Water	02/09/12 17:30	02/10/12 16:40

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 031 RTe 119
Pace Project No.: 3063004

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3063004001	MW-11 Effluent	EPA 8260	JAS	8	PASI-PA

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 031 RTe 119
Pace Project No.: 3063004

Sample: MW-11 Effluent **Lab ID: 3063004001** Collected: 02/09/12 17:30 Received: 02/10/12 16:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST	Analytical Method: EPA 8260								
Benzene	**75.3**	ug/L	1.0	0.19	1		02/16/12 05:29	71-43-2	
Ethylbenzene	**35.5**	ug/L	1.0	0.17	1		02/16/12 05:29	100-41-4	
Methyl-tert-butyl ether	**80.6**	ug/L	1.0	0.19	1		02/16/12 05:29	1634-04-4	
Toluene	**3.2**	ug/L	1.0	0.19	1		02/16/12 05:29	108-88-3	
Xylene (Total)	**8.8**	ug/L	3.0	0.54	1		02/16/12 05:29	1330-20-7	
Surrogates									
Toluene-d8 (S)	89	%	70-130		1		02/16/12 05:29	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		02/16/12 05:29	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130		1		02/16/12 05:29	17060-07-0	

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 031 RTe 119
Pace Project No.: 3063004

QC Batch: MSV/11941
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3063004001

METHOD BLANK: 404717
Matrix: Water
Associated Lab Samples: 3063004001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	02/15/12 21:23	
Ethylbenzene	ug/L	ND	1.0	02/15/12 21:23	
Methyl-tert-butyl ether	ug/L	ND	1.0	02/15/12 21:23	
Toluene	ug/L	ND	1.0	02/15/12 21:23	
Xylene (Total)	ug/L	ND	3.0	02/15/12 21:23	
1,2-Dichloroethane-d4 (S)	%	125	70-130	02/15/12 21:23	
4-Bromofluorobenzene (S)	%	108	70-130	02/15/12 21:23	
Toluene-d8 (S)	%	93	70-130	02/15/12 21:23	

LABORATORY CONTROL SAMPLE: 404718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.7	89	69.8-120	
Ethylbenzene	ug/L	20	21.3	107	70.9-124	
Methyl-tert-butyl ether	ug/L	20	22.8	114	66.4-144	
Toluene	ug/L	20	20.1	101	71.5-120	
Xylene (Total)	ug/L	60	62.6	104	70-129	
1,2-Dichloroethane-d4 (S)	%			120	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			91	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404719 404720

Parameter	Units	3062909003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	17.9	19.4	89	97	69.8-120	8	30	
Ethylbenzene	ug/L	ND	20	20	22.5	23.7	113	119	70.9-124	5	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	23.1	24.5	116	122	66.4-144	6	30	
Toluene	ug/L	ND	20	20	20.1	21.6	100	108	71.5-120	7	30	
Xylene (Total)	ug/L	ND	60	60	68.9	72.7	115	121	70-129	5	30	
1,2-Dichloroethane-d4 (S)	%						118	120	70-130			
4-Bromofluorobenzene (S)	%						93	92	70-130			
Toluene-d8 (S)	%						88	89	70-130			

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 031 RTe 119
Pace Project No.: 3063004

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

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 031 RTe 119
Pace Project No.: 3063004

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3063004001	**MW-11 Effluent**	EPA 8260	MSV/11941		

Pace Analytical
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

1493870

Section A Required Client Information:

Company: Letterle & Associates LLC
Address: 2952 Oxford Blvd
Allison Park PA 15101
Email To:
Phone: 412-488-0600 Fax: 412-488-0674
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name: RTe 119
Project Number: 031

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Rachel Christner
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

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

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	Y/N	Analysis Test ↓	Requested Analysis Filtered (Y/N): BTEX	MTBE	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-11 Effluent	WT	G			2/9/12	17:30		3				3							X	X		30650841
2																							001
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

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)
	Jared Thorn Letterle GR Pace	2/10/12	1680	GR Pace	2/10/12	1535				
					2/10/12	1640	0.7	Y	N	N

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jared Thorn

SIGNATURE of SAMPLER: Jared Thorn DATE Signed (MM/DD/YY): 2/9/2012

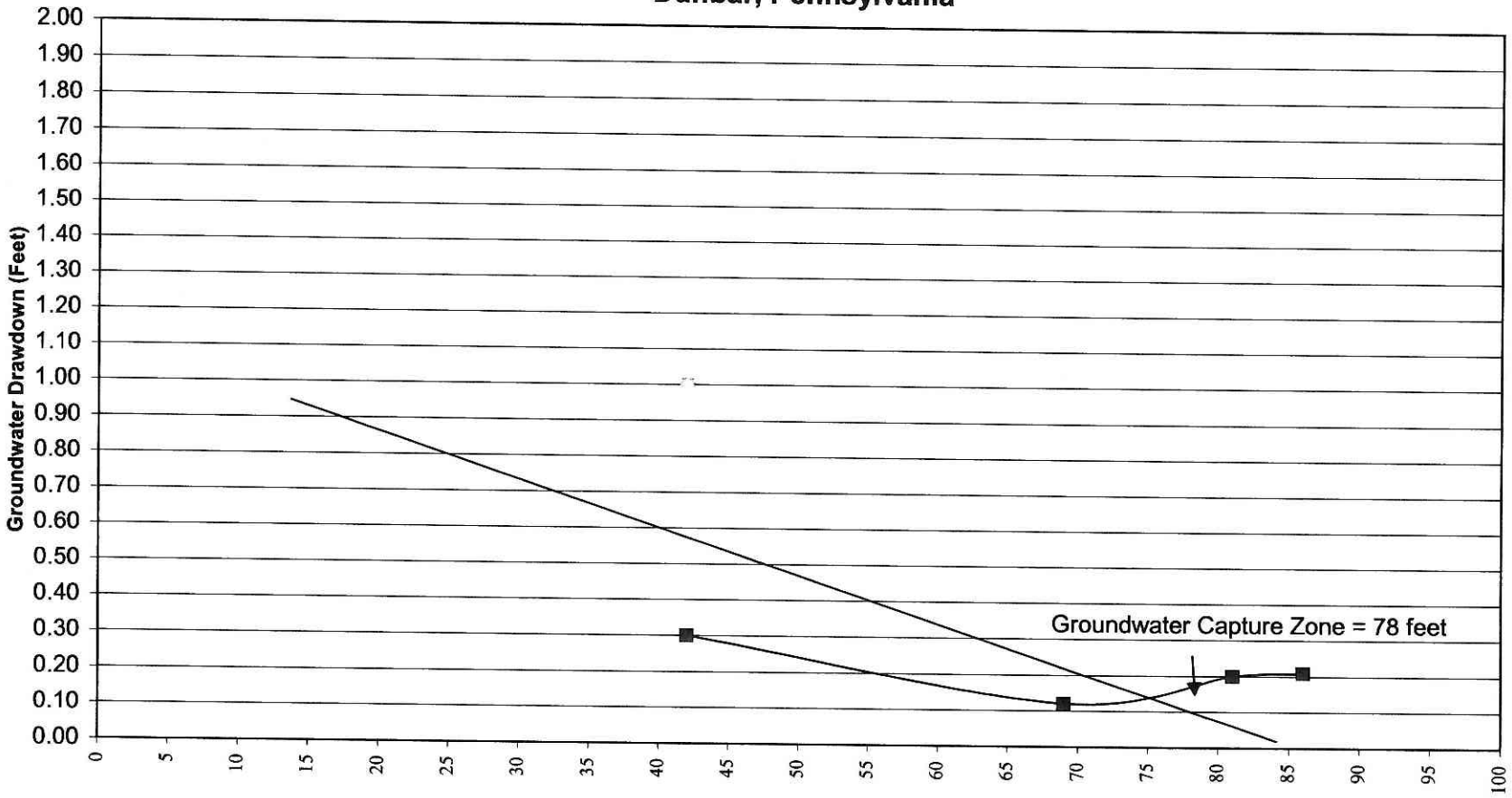
*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

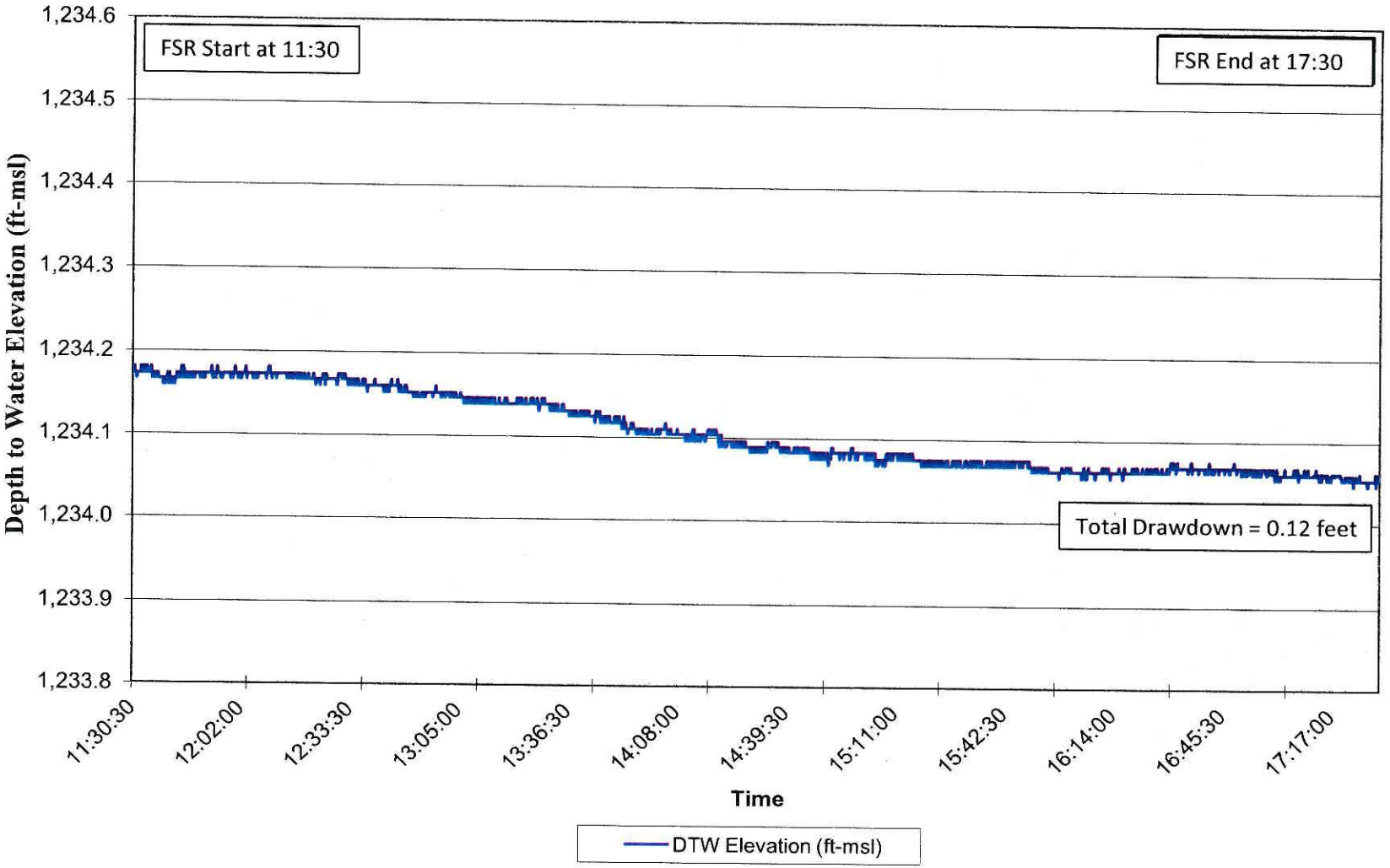
APPENDIX C

Calculations (Infinite Extent ™) of Groundwater Drawdown

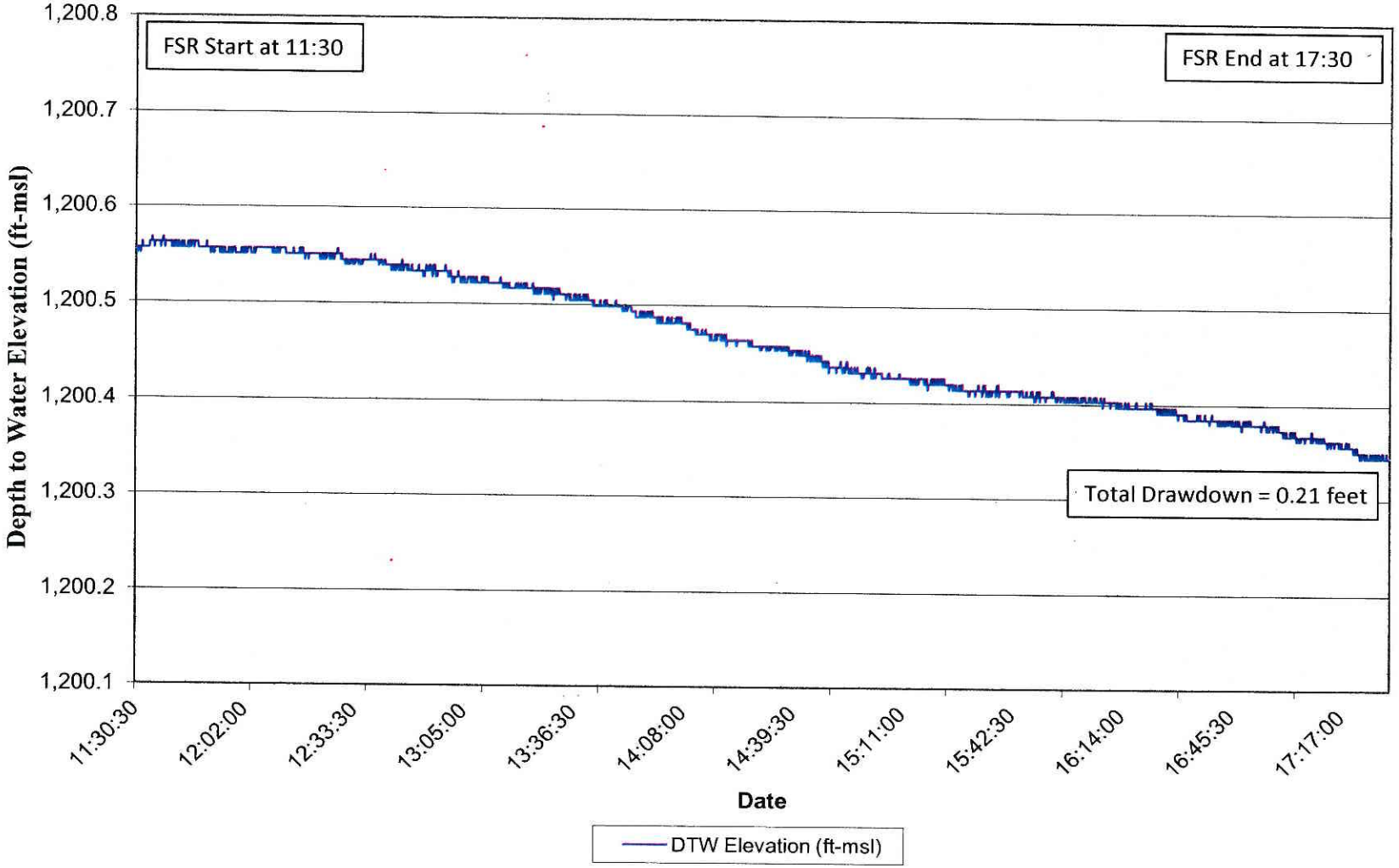
CHART 2: MW-11 FSR Groundwater Capture Zone
2/9/2012
Rt 119 Amoco
Dunbar, Pennsylvania



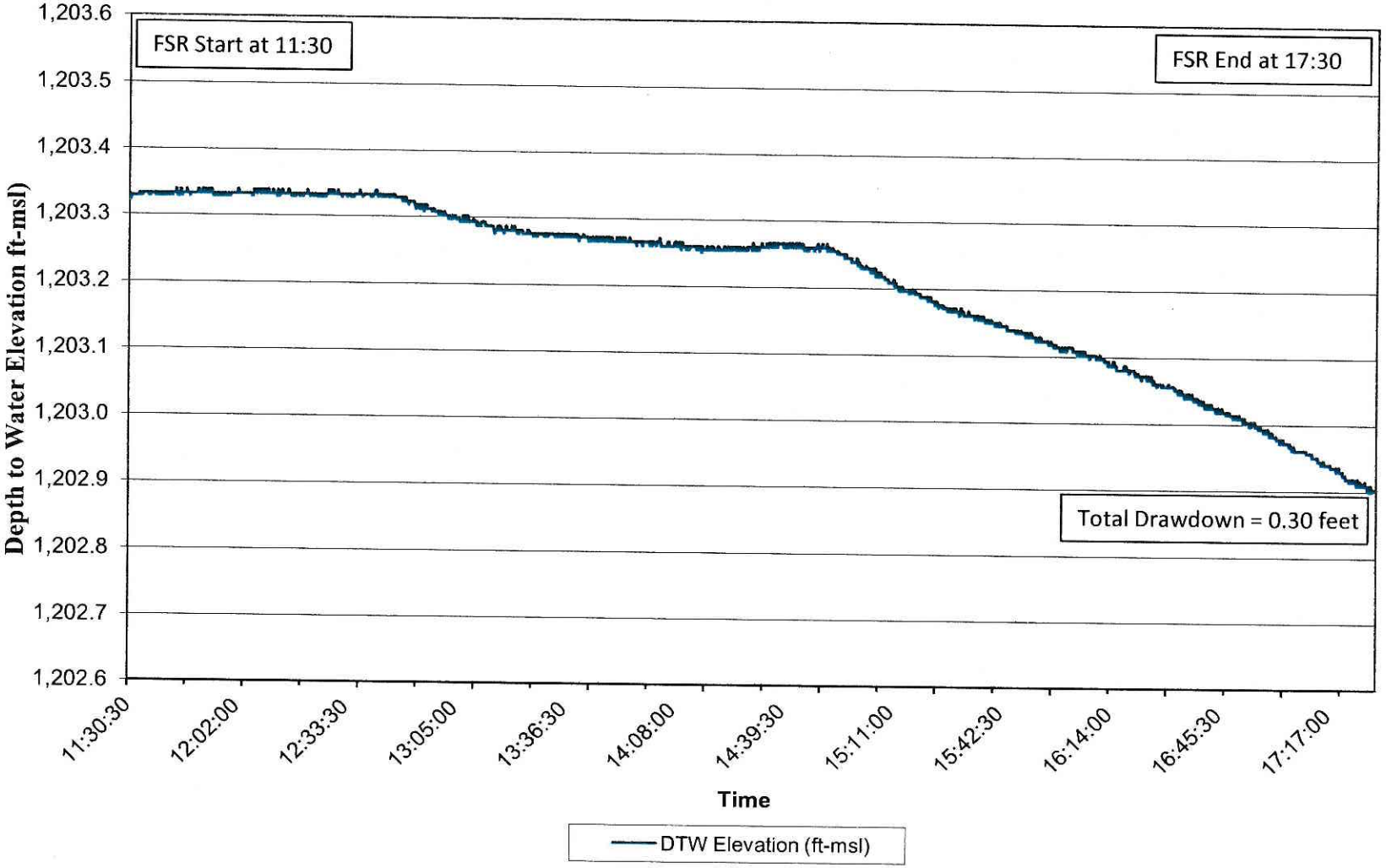
Rt. 119 Amoco - Dunbar, Pennsylvania
Groundwater Response During FSR in MW-3



Route 119 Amoco - Dunbar, Pennsylvania
Groundwater Response During FSR in MW-12



Rt. 119 Amoco - Dunbar, Pennsylvania
Groundwater Reponse During FSR Event in MW-10



APPENDIX D

Soil Boring Logs/Vapor Point Completion Details

APPENDIX F

Waste Disposal Receipts

CERTIFICATE OF DISPOSAL

McCutcheon Enterprises, Inc. Biosolids Treatment Facility certifies acceptance of the waste as identified below. This material has been processed in accordance with Permit Number 101674 and all applicable Commonwealth of Pennsylvania Department of Environmental Protection waste management regulations.

Generator: **Former Route 119 Amoco**
1809 University Drive
Dunbar, PA 15431

Document No: MC032285
Approval Number: 021012-00003669
Acceptance Date: 02/10/2012
Quantity: 300 Gallons

I certify that the information in this document is accurate and complete as to the identification of the materials from the generator listed above and the handling, processing, and disposal of the material in accordance with applicable regulations.

Name: Owen Biltz

Title: Facility Compliance Manager

Signature: Owen Biltz

Date: 02/16/2012

250 Park Road Apollo, PA 15613 **Telephone: 724-568-3623** **Fax: 724-568-2571**