

**ADDITIONAL SITE CHARACTERIZATION REPORT/GROUNDWATER
MONITORING 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

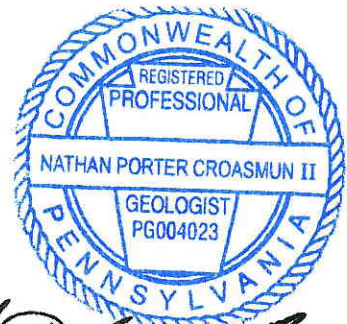


A handwritten signature in blue ink that reads "Eric A. Itle".

Eric A. Itle, P.G.
Project Scientist

Prepared by:

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



A handwritten signature in blue ink that reads "Nathan P. Croasmun II".

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 26, 2011))

April 2011

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)



Environmental Consulting & Remediation Services

2859 Oxford Boulevard, Suite 110
Allison Park, PA 15101

412. 486. 0600
412. 486. 0674 fax

April 26, 2011

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

CERTIFIED MAIL – RETURN RECIEPT REQUIRED

Re: **Additional Site Characterization Report/Groundwater Monitoring Report**
Facility ID #26-18711
Rt. 119 Amoco
1809 University Drive
Dunbar, Pennsylvania 15431

Dear Ms. Kemerer:

Enclosed please find two copies of the additional Site Characterization Report/Groundwater Monitoring Report 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). Four soil vapor monitor points (VP-1 through VP-4)
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. A copy of the PADEP correspondence is included in **Appendix A**. Letterle has conducted quarterly groundwater sampling since May 2006. A summary of additional site characterization activities is described in the following sections.

ADDITIONAL SITE CHARACTERIZATION ACTIVITIES

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 (including well abandonment activities) were completed, which included soil boring advancement, soil sampling, monitor well installations, vapor point

installations, and professional survey. Soil vapor sampling and quarterly groundwater sampling was also conducted as described in the following sections.

ADDITIONAL INVESTIGATION METHODS AND PROCEDURES

Advancement of Borings

A total of nine borings were advanced at the site from 2007 to 2010 to further characterize groundwater impact. Borings SB-10 and SB-11 were advanced on-site at the southwestern property boundary. The remaining seven borings were advanced off-site and downgradient of borings SB-10 and SB-11. All borings were installed to evaluate the vertical and horizontal extent of the unleaded gasoline release at the site (**Figure 1**). The borings were completed in four phases (note that SB-13 designation was inadvertently used twice):

- | | |
|------------------|---------------------|
| • October 2007 | SB-10 and SB-11 |
| • September 2008 | SB-12 |
| • February 2009 | SB-13/VP-4 |
| • December 2010 | SB-13 through SB-17 |

Approximately one week prior to the drilling event, the Pennsylvania One Call, Inc. was notified to alert area utility companies that subsurface work was to be conducted at the site. Prior to drilling, each pre-determined boring location was hand cleared or soft-dug with an air knife and vacuum system. A one-foot diameter by four-foot deep hole was made at each boring location.

During boring installation, soil samples were collected continuously with two-foot long split-barrel samplers to the top of bedrock (2.5 feet (MW-11) to 9 feet below ground surface (bgs) (MW-15 and MW-16). All samples were collected in accordance with ASTM D1586-99 (standard test method for penetration test). The soil samples were logged in accordance with the United Soil Classification System and were field screened for volatile organic compounds (VOCs) utilizing a photoionization detector (PID) using headspace analysis methods.

Decontamination procedures during each drilling event consisted of the setup of a decontamination pad, removal of heavy soil material from the tools, followed by a soapy water wash, potable water rinse, and air-drying. The drilling augers, air rotary rods, and rig were cleaned with a high-pressure hot water power washer prior to use at each boring location. The following sections describe the methodologies that were used to advance the borings during the various phases.

October 2007 Boring Installation

Borings SB-10 and SB-11 were advanced by Terra Testing, Inc. of Washington, Pennsylvania, under the supervision of a Letterle scientist with a truck-mounted CME-85 drill rig, utilizing a combination of hollow stem auger drilling methods to the top of bedrock and air hammer equipment to the completion of each boring.

A Letterle scientist logged the bedrock and the samples were field screened with a PID for the presence of VOCs using headspace analysis techniques. The PID results were non-detect for all soil samples collected from all borings. Borings were advanced into bedrock, which was encountered at approximately seven feet bgs. Rock cuttings were regularly collected and logged until the boring termination at 50 feet bgs. Moist conditions were encountered at 10 feet bgs in boring SB-10 and wet conditions were encountered at 50 feet bgs in boring SB-11. Soil samples collected from borings SB-10 and SB-11 were submitted to an accredited laboratory as described below. The boring logs that include the PID results are compiled in **Appendix B**.

Discarded soil samples and drill cuttings from the boring activities were collected and placed in properly labeled 55-gallon drums. Three 55-gallon drums containing waste from October 2007 were transported by the Penn Ohio Corporation to the American Waste Landfill in Waynesburg, Ohio on January 17, 2008. Waste disposal receipts are included in **Appendix C**.

September 2008 Boring Installation

Based on the data obtained from initial drilling activities and subsequent groundwater analytical data, one additional boring (SB-12) was advanced off-site in an effort to delineate the horizontal extent of the contaminant plume.

Eichelbergers, Inc. (Eichelbergers) of Somerset, Pennsylvania, under the supervision of a Letterle scientist, advanced boring SB-12 using a Schramm T450 drill rig that utilized six-inch diameter air rotary methods. Soil samples were not collected because shale bedrock was encountered at approximately five feet bgs. Wet conditions were encountered in boring SB-12 at an approximate depth of 48 ft bgs. The boring logs are compiled in **Appendix B**.

Discarded soil samples and drill cuttings from the boring activities were collected and placed in properly labeled 55-gallon drums. Four 55-gallon drums containing waste from September 2008 were transported by the Penn Ohio Corporation to the American Waste Landfill in Waynesburg, Ohio on November 24, 2008. Waste disposal receipts are included in **Appendix C**.

February 2009 Boring Installation

On February 17, 2009, one boring (SB-13/VP-4) was advanced in an effort to delineate and characterize soil vapor quality at the western off-site property near the off-site residence with a basement. The vapor point was advanced using hand auger methods. Soil samples were collected directly from the stainless steel hand auger bucket for PID readings and lithologic descriptions. 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 implant was installed at a depth of seven feet bgs, which was above the saturated zone, and was subsequently completed as vapor monitoring point (VP-4). 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. The vapor point implant log is included in **Appendix B** and the location is shown on **Figure 1**.

The scientist logged the soil and the samples were field screened with a PID for the presence of VOCs using headspace analysis techniques. The PID results were non-detect for all soil samples collected. A soil sample was collected from boring SB-13/VP-4 (6-7 feet bgs) and submitted to Pace for analysis of unleaded gasoline parameters [benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary-butyl ether (MTBE), cumene, and naphthalene] using USEPA SW-846 Method 8260B in accordance with the storage tank regulations.

Discarded portions of the soil cuttings and decontamination waste were placed in one 5-gallon bucket that was properly labeled and secured with a lid for final disposition.

December 2010 Boring Installation

Following off-site access approval during the 4th Quarter 2010, five borings (SB-13 through SB-17) were advanced at the site on December 28 and 29, 2010 in an effort to delineate unleaded gasoline impact off-site and downgradient to the southwest, west, and northwest of monitor well MW-12 (**Figure 1**).

Eichelbergers, under the supervision of a Letterle scientist, advanced borings SB-13 through SB-17 using an Ingersoll Rand T4W utilizing air rotary methods, using a 6-inch diameter tri-cone roller bit. Prior to air rotary use, soil samples were collected continuously at each location with a direct push sampling device to the top of bedrock. Bedrock was encountered within each boring at depths ranging from three feet (SB-13) to nine feet bgs (SB-15 and SB-16). At bedrock, the borings were advanced using air rotary methods to depths ranging from 30 feet below ground surface (ft bgs) (SB-14 and SB-15) to 60 ft bgs (SB-16).

A Letterle scientist logged the soil and bedrock, and the samples were field screened with a PID for the presence of VOCs using headspace analysis techniques. The PID results were non-detect for all soil samples collected from all borings. Based on field observations and PID results and because soil impact has been delineated on-site, soil samples were not collected from borings SB-13 through SB-17.

Saturated conditions were encountered in borings SB-14 and SB-15 at approximate depths of 18 and 24 feet bgs, respectively; therefore, borings SB-14 and SB-15 were terminated at 30 feet bgs to monitor the shallow bedrock aquifer. Saturated conditions were encountered in borings SB-13, SB-16, and SB-17 at approximate depths of 40, 51, and 46 feet bgs, respectively. Borings SB-13, SB-16, and SB-17 were terminated 50, 60, and 55 feet bgs, respectively, to monitor the deep bedrock aquifer. The boring logs that include the PID results are compiled in **Appendix B**.

Discarded drill cuttings from the boring installation activities were collected and placed in properly labeled 55-gallon drums. Sixteen 55-gallon drums were loaded by McCutcheon and transported to the McCutcheon Enterprises Biosolids Treatment Facility in Apollo, Pennsylvania on December 2, 2010. Waste disposal receipts are included in **Appendix C**.

Soil Sampling and Analysis

Soil samples from borings SB-10 and SB-11 during additional site characterization activities were

collected for laboratory analysis based on visual observation; PID readings; and/or were collected at the bedrock interface if PID results and visual signs did not indicate the presence of impact. Soil samples were placed in laboratory-supplied sample containers (TerracoreTM samplers), labeled, and stored in a cooler with ice at a temperature of approximately 4°C for preservation. Chain of custody documentation followed standard protocol.

Soil samples were submitted to Pace Analytical Services, Inc (Pace) of Greensburg, Pennsylvania for analysis of unleaded gasoline parameters using USEPA SW-846 Method 8260B, in accordance with the storage tank regulations. The regulated unleaded gasoline parameters included BTEX, MTBE, cumene, and naphthalene.

Soil Vapor Sampling and Analysis

On April 15, 2010 and June 21, 2010, vapor samples were collected from three on-site vapor points (VP-1, VP-2, and VP-3 and on off-site vapor point (VP-4) with laboratory-certified Summa[®] canisters. Vapor samples were also collected on February 17, 2009 and June 6, 2009 from off-site vapor point VP-4. Prior to sampling, the VPs were purged for approximately five 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.

Installation of Monitor Wells

Borings SB-10 through SB-17 were completed as monitor wells MW-10 through MW-17, respectively. Monitor wells MW-14S and MW-15S were completed within the first encountered water bearing zone at depths ranging from 18 ft and 24 ft bgs, respectively. Monitor wells MW-10 through MW-13, MW-16, and MW-17 were completed within the second encountered water bearing zone at depths ranging from 50 feet bgs (MW-10, MW-11, MW-12, MW-13) to 60 feet bgs (MW-16).

The wells were constructed with 2-inch diameter, schedule 40 polyvinyl chloride (PVC) solid risers and 0.020-inch factory-slotted 2-inch diameter PVC well screens. Clean filter sand was added to fill the remaining annular space spanning the length of the well screen interval; the sand pack extended to approximately two feet above the top of the well screen. An approximate two-foot thick bentonite pellet seal was placed on top of the sand pack in each borehole. The remaining annular space was filled with cement-bentonite grout. The monitor wells were completed with locking caps and protected with flush-mount steel manhole covers set in a 1.5-foot square concrete pad. Monitor well construction details are included in **Appendix B**.

Monitor Well Development

Following installation, each monitor well was developed using a submersible pump to remove fine-grained material that entered the well and to ensure proper hydraulic communication with the aquifer. The development water was collected, treated with liquid-phase granular activated carbon (GAC), and discharged on-site. The GAC was subsequently transported off-site for regeneration.

Professional Survey

Letterle subcontracted Fike Associates, Inc. (Fike), of Clarion, Pennsylvania, on February 15, 2011 to professionally survey the site, monitor wells, and all pertinent site features. Fike's survey included property boundaries, utility locations, building dimensions, and selected features of adjacent properties. The monitor well top of casing (TOC) elevations are included on **Table 2** and within the well construction logs in **Appendix B**.

Well Abandonment

From September 9-13, 2010, EarthSystems, LLC, under the supervision of a Letterle scientist, abandoned a total of 15 wells and vapor points, in accordance with the PADEP well abandonment requirements.

- Four soil vapor points (VP-A through VP-D),
- Two recovery wells (RW-1 and RW-2),
- Two monitoring wells (MW-2 and MW-9),
- Two air sparge wells (AS-1 and AS-2),
- Three soil vapor extraction wells (SVE-1, SVE-2, and SVE-3),
- One deep well (DW-1), and
- One unknown/unnamed well.

Well abandonment forms were prepared by Letterle and submitted to the Pennsylvania Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey in the 4th Quarter of 2010. Well abandonment forms were not created for soil vapor points VP-A through VP-D and the unknown well because well details were not available. Copies of the well abandonment forms are included in **Appendix D**.

INVESTIGATION RESULTS

Soil Analytical Results

The analytical results from soil samples collected during additional site characterization activities from 2007 to 2010 indicated that regulated unleaded gasoline constituents do not exceed the PADEP SHS for BTEX, MTBE, cumene, and naphthalene. The laboratory results for the soil samples are summarized on **Table 1**. The complete laboratory analytical reports are included in **Appendix E**.

The horizontal and vertical extent of unleaded gasoline constituents in the soil was delineated at the site based on visual and olfactory observations, PID results, and soil analytical data collected during the site characterization.

Soil Vapor Analytical Results

The analytical results from the soil vapor samples (VP-1 through VP-4) collected in 2009 and 2010

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 3**. The complete laboratory reports are included in **Appendix E**.

Groundwater Monitoring

Groundwater gauging and monitoring from the most recent event on January 28, 2011 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 28, 2011 indicated the following:

- The depth to groundwater in the deep bedrock aquifer ranged from 28.26 feet below TOC in MW-6 to 44.58 feet below TOC in MW-7.
- The depth to groundwater in the shallow bedrock aquifer ranged from 14.87 feet below TOC in MW-14S to 16.83 feet below TOC in MW-15S.
- The horizontal hydraulic gradient in the deep bedrock aquifer was approximately 0.052 ft/ft (based on groundwater elevation data for monitor wells MW-12 (1,199.14 ft) and MW-17 (1,192.46 ft))
- The apparent groundwater flow direction at the site is 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 (**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 28, 2011 groundwater analytical results exceeded the PADEP SHS for the following parameters:

- Benzene in one on-site well (MW-11) and two off-site wells (MW-12 and MW-14S),
- MTBE in one on-site well (MW-11) and two off-site wells (MW-12 and MW-14S), and
- Naphthalene in one on-site well (MW-11).

The groundwater sampling results are illustrated on **Figure 3** and summarized on **Table 4**. The complete laboratory analytical report is included in **Appendix E**.

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 F**). 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-14S and MW-15S were not evaluated. A review of the Mann-Kendall statistical trend analysis spreadsheets indicates the following:

- increasing trends for benzene, MTBE, and naphthalene in on-site monitor well MW-11 and
- 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 2011 (**Appendix G**). 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 and MTBE concentration trendlines for on-site monitor well MW-11 are increasing
- Benzene and MTBE concentration trendlines for off-site monitor well MW-12 are increasing
- Naphthalene concentration trendline for on-site monitor well MW-11 is increasing slightly

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 site characterization include the following:

- Soil impact has been delineated on-site. None of the soil sample results from the site characterization activities exceeded the PADEP SHS for unleaded gasoline constituents for used residential aquifers with TDS concentrations less than 2,500 mg/l, except for 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 (4-6 feet bgs) exceeded the naphthalene PADEP SHS.
- A total of 13 monitor wells are currently located at the site (on-site wells MW-3, MW-4, MW-7, MW-8, MW-10, and MW-11 and off-site wells MW-6 and MW-12 through MW-17).
- Letterle completed 17 quarterly groundwater gauging and sampling events on a quarterly basis since May 2006.
- A total of 15 wells and vapor points were properly abandoned at the site per PADEP approval.
- Groundwater was encountered within the deep bedrock aquifer at depths ranging from 28.26 feet below TOC in MW-6 to 44.58 feet below TOC in MW-7 (January 28, 2011). Based on the groundwater contour elevations, the interpreted groundwater flow direction was 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.
- 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 2011 and the 1st Quarter of 2012 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

TABLES

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

Soil I.D.	Date	Sample I.D. Depth	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (ug/kg)	Cumene (µg/kg)	Naphthalene (µg/kg)	MTBE (ug/kg)
SB-1 (GB-1)	05/08/06	6' - 7'	160	170	8,600	780	280	6,800	<6.7
SB-2 (GB-2)	05/08/06	4' - 6'	49	100	15,000	570	340	13,000	<7.6
SB-3 (GB-3)	05/08/06	6' - 8'	94	280	2,400	5,900	180	950	<5.9
MW-9 (GB-4)	05/05/06	5' - 7'	280	210	360	620	48	82	26
GB-5	05/08/06	SS-3	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5
GB-6	05/08/06	GB-6/5'	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5	<5.5
GB-7	05/08/06	GB-7/4'	22	14	<5.8	<5.8	<5.8	<5.8	<5.8
GB-8	05/08/06	GB-8/5'	170	87	3,900	17,000	75	280	8.1
GB-9	05/08/06	GB-9/5'	120	90	79	180	56	74	14
GB-10	05/09/06	SS-4/6'-7'	25	48	1,700	12,000	330	3,100	<5.4
GB-11	05/09/06	SS-3/4'-6'	110	95	290	510	81	350	16
GB-12	05/09/06	SS-2/2'-4'	130	150	300	190	160	390	100
GB-13	05/09/06	SS-2/2'-4'	61	70	86	41	17	35	23
GB-14	05/09/06	SS-1/0'-2'	2,000	290,000	54,000	390,000	11,000	31,000	<5.6
GB-15	05/09/06	SS-3/4'-6'	280	50	3,200	6,200	76	270	<5.3
GB-16	05/09/06	SS-3/4'-6'	180	270	6,500	33,000	270	4,800	<5.4
GB-17	05/09/06	SS-2/2'-4'	<5.5	<5.5	29	100	26	1,200	<5.5
GB-18	05/09/06	SS-1/0'-2'	<5.7	<5.7	<5.7	8.1	<5.7	10	<5.7
GB-19	05/09/06	SS-3/4'-6'	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3
SB-10	10/10/07	SS-2/2'-4'	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
SB-11	10/09/07	SS-2/2'-4'	<5.6	<5.6	<5.6	5.6	<5.6	<5.6	<5.6
SB-12	09/23/08	Soil sample was not collected at soil boring SB-12.							
SB-13	02/17/09	SS-4/6'-7'	<4.8	<4.8	<4.8	<14.5	<4.8	<4.8	<4.8

MSC's* *	500	100,000	70,000	1,000,000	600,000	25,000	2,000
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Notes:

**MSC's--Medium Specific Concentrations are designated as PADEP Statewide Health Standards

The regulatory standards shown above are the statewide health standards.

µg/kg - micrograms per kilogram

MTBE - methyl tertiary butyl ether

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 (40.75/25) [4]	MW-2 Abandoned In September 2010			
	08/27/10	1,241.55	37.53	1,204.02
	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 (36/20) [4]	01/28/11	1,235.91	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 (50.75/20) [4]	01/28/11	1233.78	35.06	1,198.72
	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		
MW-6 (46/20) [4]	01/28/11	1,229.38	28.26	1,201.12
	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 (50/15) [2]	01/28/11	1,242.42	44.58	1,197.84
	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 (51/15) [2]	01/28/11	1,237.22	37.31	1,199.91
	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 (55/15) [2]	MW-9 Abandoned In September 2010			
	08/27/10	1,239.09	38.45	1,200.64
	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 (50/15) [2]	01/28/11	1,239.47	36.52	1,202.95
	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 (50/15) [2]	01/28/11	1,237.13	37.17	1,199.96
	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 (50/20) [2]	01/28/11	1,237.97	38.83	1,199.14
	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	01/28/11	1,231.41	33.06	1,198.35
MW-14S	01/28/11	1,231.79	14.87	1,216.92
MW-15S	01/28/11	1,233.47	16.83	1,216.64
MW-16	01/28/11	1,234.06	35.76	1,198.30
MW-17	01/28/11	1,231.92	39.46	1,192.46

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. All monitor wells were professionally surveyed following installation of MW-13 through MW-17. The corrected elevations start 1/28/11.

TABLE 3
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	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

Residential MSC (mg/m³)¹	0.27	56	1.9	14	8.1	54	0.42
Non-Residential MSC (mg/m³)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 4
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 4
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	01/28/11	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 4
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	01/28/11	<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 4
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
MW-6	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 4
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	01/28/11	<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	01/28/11	<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 4
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
MW-6	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 4
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	01/28/11	<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 4
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	01/28/11	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	283	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
MW-12	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	01/28/11	<1	<1	<1	<3	1.8	<1	<2
MW-14S	01/28/11	36.5	2.3	18.6	9.5	22.1	6.4	5.8
MW-15S	01/28/11	14.8	1.4	1.2	3	7.8	<1	<2
MW-16	01/28/11	<1	4.3	1	14.8	<1	<1	<2
MW-17	01/28/11	<1	3.5	1	5.4	<1	<1	<2

TABLE 4
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)
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 4
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 4
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 Air Sparge well	12/10/10	AS-1 was properly abandoned in September 2010						
	11/14/05	1	<1	<1	<3	6.3	<1	2.4
	08/23/00	Well was not sampled.						
AS-2 Air Sparge well	12/10/10	AS-2 was properly abandoned in September 2010						
	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:

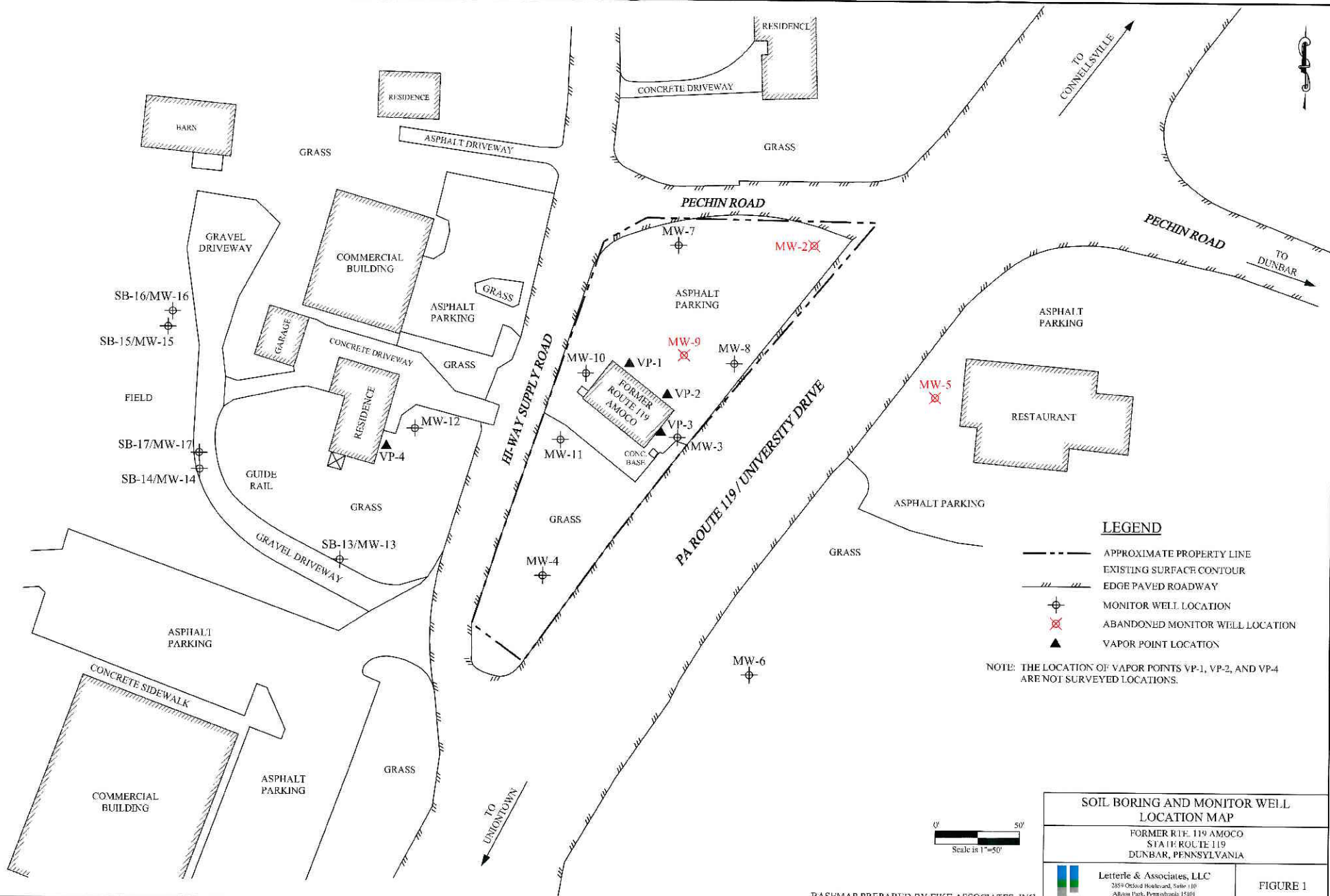
Shaded cells indicate concentrations in excess of the PADEP Statewide Health Standards.

* The Medium Specific Concentrations (MSCs) listed above are the PADEP Statewide Health Standards for residential used aquifers.

µg/l - micrograms per liter

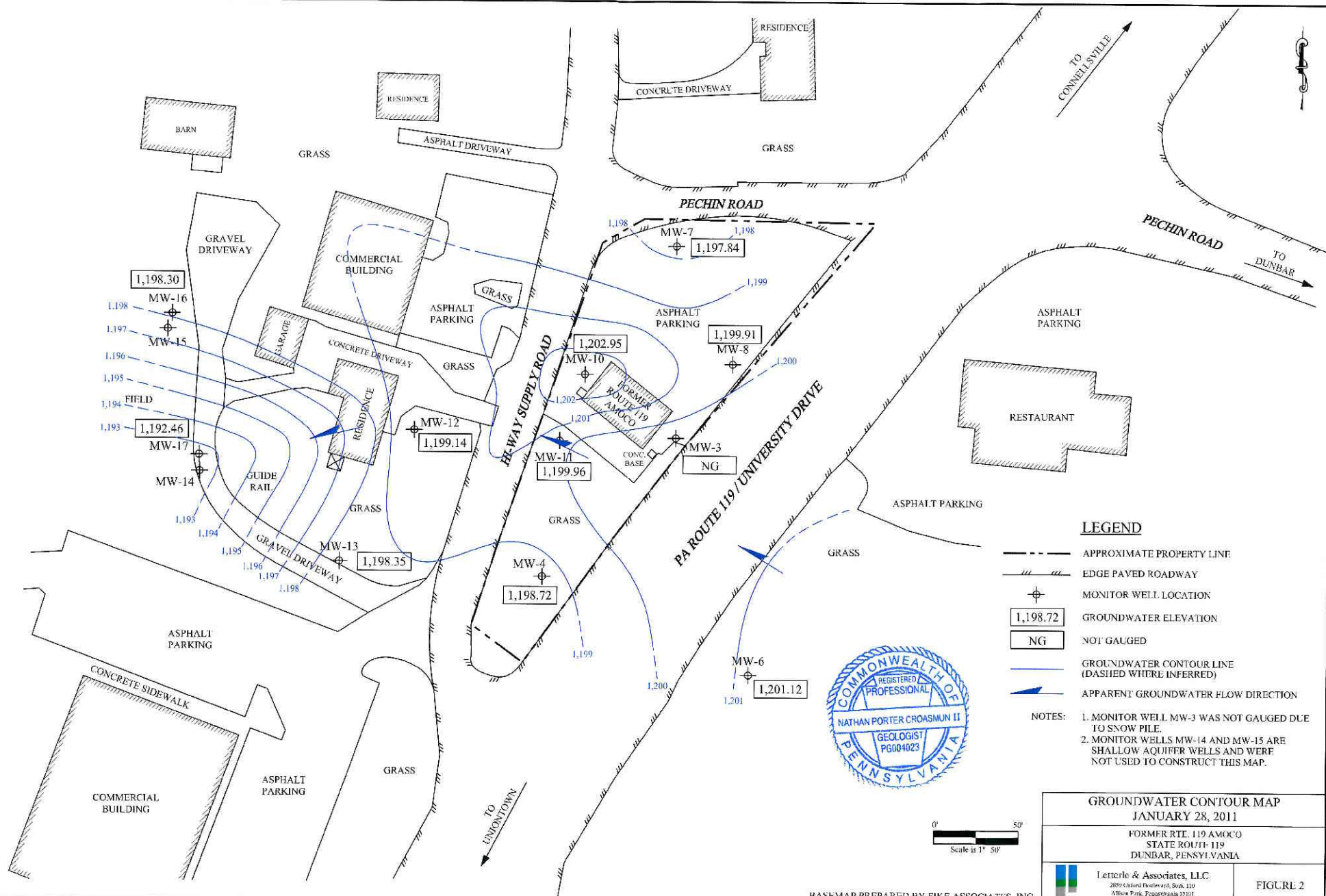
MTBE - methyl tertiary butyl ether

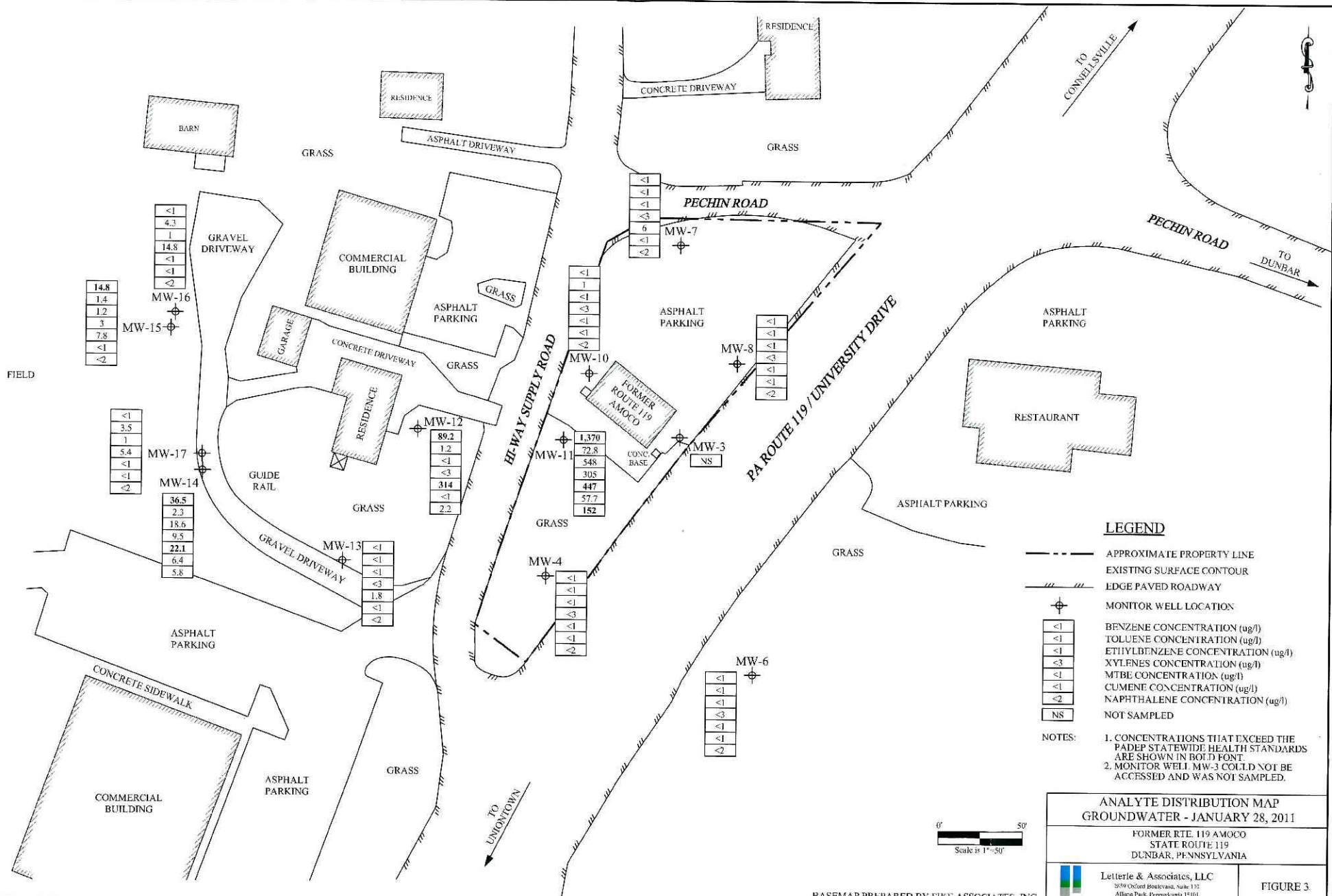
FIGURES



BASHEMAP PREPARED BY TIKE ASSOCIATES, INC.

FIGURE 1





APPENDICES

APPENDIX A

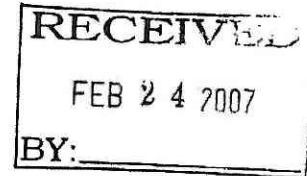
PADEP Correspondence

February 2007



Pennsylvania Department of Environmental Protection

400 Waterfront Drive
Pittsburgh, PA 15222-4745
February 23, 2007



Southwest Regional Office

412-442-4000
Fax 412-442-4194

Mr. & Mrs. Timothy Shell
202 Center Wood Circle
Uniontown, Pa 15431

Re: SCR Approval w/Modifications
Facility I.D. No. 26-18711
Former Route 119 Amoco
1809 University Drive
Dunbar, Pennsylvania
Fayette County

Dear Mr. & Mrs. Shell:

The Department of Environmental Protection (Department) has completed its review of the Site Characterization Report (SCR) for the above-noted site (the "Facility"), which was received in our office on September 18, 2006. This report were prepared and submitted on your behalf by your consultant, Letterle & Associates, LLC, in response to a release from the underground storage tank (UST) system at this site on January 20, 2005.

The September 18, 2006 SCR is hereby approved as submitted with the following modifications:

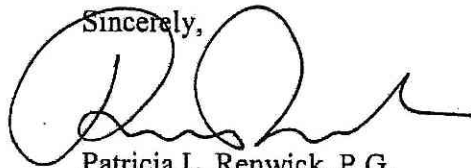
- Figure 7 (the Groundwater Contour Map) fails to provide an accurate depiction of the groundwater flow at the site. In examining the groundwater contour map, it is apparent that monitoring wells MW-3 and MW-8 have water level elevations that are anomalies for the site. The other five (5) monitoring points have water level elevations that correspond with the site surface elevation (site gently sloping towards Rt. 119 – page 2 of report). The location of the storm water drain may account for the water level anomalies. The groundwater contour maps should be re-contoured to depict accurate groundwater contours, which will in turn provide accurate groundwater flow directions and hydraulic gradients for the site. Please provide updated groundwater contour maps that accurately depict the groundwater contours, updated hydraulic gradients and accurate groundwater flow direction at the site.
- The potential for a change in the groundwater flow direction may affect the point of compliance (POC) wells for the site. Additional POC wells may be necessary in order to demonstrate attainment and provide additional data points for the Fate and Transport analysis for the site. Also, additional sampling may be necessary to support the Fate and Transport analysis for the site.



- The water levels recorded for the site do not correspond with the surface elevation for the site. The average site surface elevation is approximately 1,240 ft MSL (page 2 of the report). The groundwater elevations recorded on the Figure 7 indicate that groundwater is over 700 feet bgs. (The monitoring wells on site range in depth from 35 to 55 feet bgs). Also, the geologic cross sections provided in the report (Figures 5 and 6) also do not correspond to with the surface elevation for the site. Please provide updated groundwater contour maps and site geologic cross-sections that correspond to the appropriate site surface elevations.
- The hydraulic conductivity (K) testing was conducted at MW-3, MW-8 and MW-9. There was a large differential noted in the K value of MW-3 versus the K values for MW-8 and MW-9, therefore the hydraulic conductivity value for the site was calculated by averaging the values for MW-8 and MW-9 only. The K values are then used to determine groundwater velocity for the site. Please provide additional hydraulic conductivity data from additional data points on site in order to calculate a more statistically accurate K value average for the site.
- The K values and hydraulic gradients are applied to provide a groundwater velocity value for the site. Please provide updated information on the groundwater velocity for the site.
- The Fate and Transport models (QD) provided in the report will need to be recalculated based on the changes in the input parameters for K, V, and i. Please provide this updated information.

If you have any questions, please contact me at 412-442-5240.

Sincerely,



Patricia L. Renwick, P.G.
Licensed Professional Geologist
Environmental Cleanup

cc: David Martineck – Letterle & Associates, LLC ✓
Kerry Youndt – ICF Consulting

APPENDIX B

Soil Boring Logs and Monitor Well Construction Details

WELL CONSTRUCTION LOG

Borehole: **SB-10/MW-10**

Total Depth: **50 feet**

Drill Date: **10/9/07**

Project: **Former Route 119 Amoco**

Diameter: **2-inch**

Casing Elevation: **1,239.23**

Client: **Mr. & Mrs. Tim Shell**

Casing Length: **35 feet**

Water Level - Static: **1202.71**

Location: **Dunbar, Pa**

Screen Length: **15 feet**

Gauging Date: **1/28/11**

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					The diagram illustrates the well's construction from the surface down to 50 feet. It shows a casing pipe with grout filling the annulus. A bentonite seal is located at approximately 28 feet depth. A screen is installed from 35 feet to 50 feet depth, labeled as '#5 Best Sand'. A manhole cover is shown at the surface. The water level is indicated at 1202.71 feet.
2		Brown Sandy Silt; dry.	1		100	0.0	
4		Medium Brown Silty Clay; with rock fragments, dry.	2*	7-9-11-14	100	0.0	
6			3	14-15-21-50/5	100	0.0	
8		Medium Gray Shale; slightly weathered, dry.					
10							
12							
14		Medium Gray Shale; dry.					
16							
18							
20		trace water, slight odor.					
22		Dark Gray Shale; moist to dry.					
24							
26							
28							
30							
32							
34							
36							
38							
40							
42							
44							
46							
48		Black Coal; moist.					
50		Extent of Borehole					
52							
54							
56							

Drilled By: **Terra Testing, Inc.**

Borehole Diameter: **4-inch**

Log By: **Eric Itle**

Drill Method: **HSA/ Air Hammer**

Type: **PVC**

* Sample submitted for laboratory analysis

Sheet: **1 of 1**

Slot Size: **0.020-inch**

WELL CONSTRUCTION LOG

Borehole: SB-11/MW-11

Total Depth: 50 feet

Drill Date: 10/9/07

Project: Former Route 119 Amoco

Diameter: 2-inch

Casing Elevation: 1,236.68

Client: Mr. & Mrs. Tim Shell

Casing Length: 35 feet

Water Level - Static: 1,199.51

Location: Dunbar, Pa

Screen Length: 15 feet

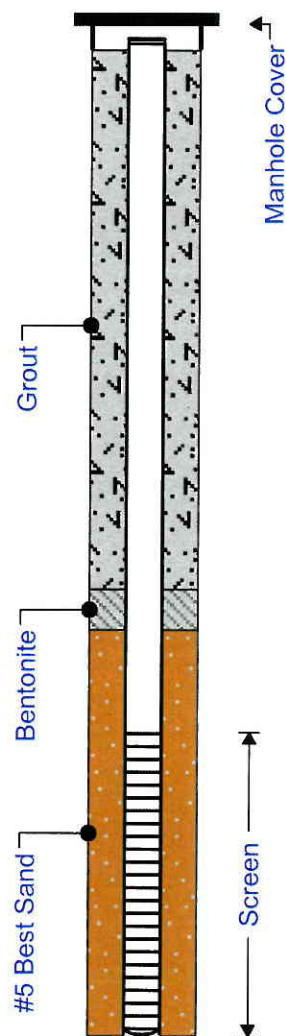
Gauging Date: 1/28/11

SUBSURFACE PROFILE

SAMPLE

Well Completion Details

Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					
2		Brown Sandy Silt; slightly moist.	1		100	0.0	
4		Medium Brown Mudstone slightly fissile, dry.	2*		100	0.0	
6			3	3-8-9-12	100	0.0	
8		Medium Gray Shale; slightly weathered, dry.	4	18-37-50/3	36	0.0	
10							
12							
14		Medium Brown Mudstone; weathered, dry.					
16		Medium Gray Silty Shale; dry.					
18		Black Coal; moist, slight odor.					
20		Dark Gray Silty Shale; dry, slight odor.					
22							
24							
26							
28							
30		moist.					
32							
34							
36							
38							
40							
42							
44							
46							
48							
50		Medium Gray Siltstone; hard, wet.					
52		Extent of Borehole					
54							
56							



Drilled By: Terra Testing, Inc.

Borehole Diameter: 4-inch

Log By: Eric Itle

Drill Method: HSA/ Air Hammer

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 1 of 1

Slot Size: 0.020-inch

WELL CONSTRUCTION LOG

Borehole: SB-12/MW-12

Total Depth: 50 feet

Drill Date: 12-28-2010

Project: Former Route 119 Amoco

Diameter: 2-inch

Casing Elevation: 1,237.47

Client: Mr. & Mrs. Tim Shell

Casing Length: 30 feet

Water Level - Static: 1,198.64

Location: Dunbar, Pa

Screen Length: 20 feet

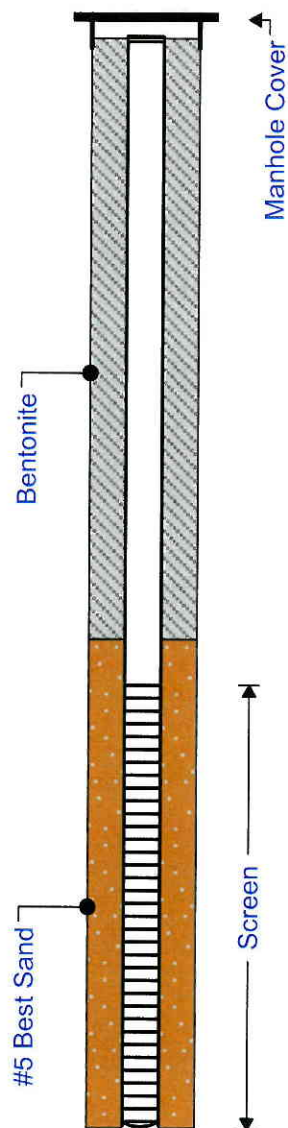
Gauging Date: 9/30/08

SUBSURFACE PROFILE

SAMPLE

Well Completion Details

Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					
0		Topsoil	1	HC	100	0.0	
2		Limestone Gravel	2	HC	100	0.0	
4		Light Brown Silty Clay; dry.					
6		Gray Silty Clay; dry.					
8		Light Brown Shale; highly weathered.					
10		Gray Siltstone					
12		Light Gray Shale					
14		Gray Siltstone					
16		Dark Gray Sandstone					
18		Gray Shale					
20		Coal					
22		Gray Shale					
24		Coal					
26		Gray Siltstone					
28		Extent of Borehole					
30							
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							



Drilled By: Eichelbergers Drilling

Borehole Diameter: 6-inch

Log By: Jared Thorn

Drill Method: Air Hammer

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 1 of 1

Slot Size: 0.010-inch

WELL CONSTRUCTION LOG

Borehole: SB-13/MW-13

Total Depth: 50 feet

Drill Date: 12/28/2010

Project: Former Route 119 Amoco

Diameter: 2-inch

Casing Elevation: 1,230.77

Client: Mr. & Mrs. Tim Shell

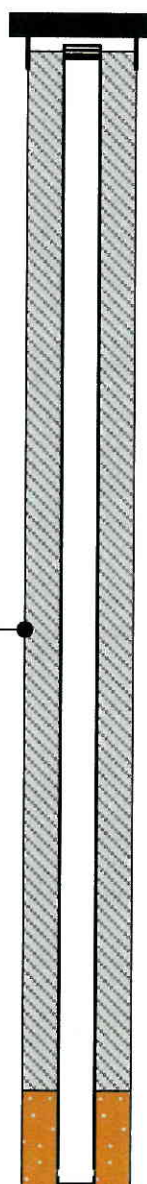
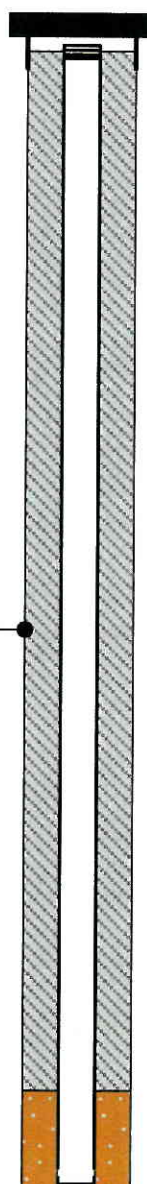
Casing Length: 30 feet

Water Level - Static: 1,197.71

Location: Dunbar, PA

Screen Length: 20 feet

Gauging Date: 11/28/11

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					 Manhole Cover
0		Topsoil	SS-1	HC	100	0.0	
2		Limestone Gravel					
2		Light Brown Silty Clay; dry.	SS-2	HC	100	0.0	
4		Gray Silty Clay; dry.					
6		Light Brown Shale; highly weathered.					
8							
10							
12		Gray Siltstone					
14							
16							 Bentonite
18		Light Gray Shale					
20		Gray Siltstone					
22							
24		Dark Gray Sandstone					
26							
28							
30							

Drilled By: Eichelbergers Drilling

Borehole Diameter: 6-inch

Log By: Jared Thorn

Drill Method: Air Rotary

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 1 of 2

Slot Size: 0.010-inch

WELL CONSTRUCTION LOG

Borehole: SB-13/MW-13

Total Depth: 50 feet

Drill Date: 12/28/2010

Project: Former Route 119 Amoco

Diameter: 2-inch

Casing Elevation: 1,230.77

Client: Mr. & Mrs. Tim Shell

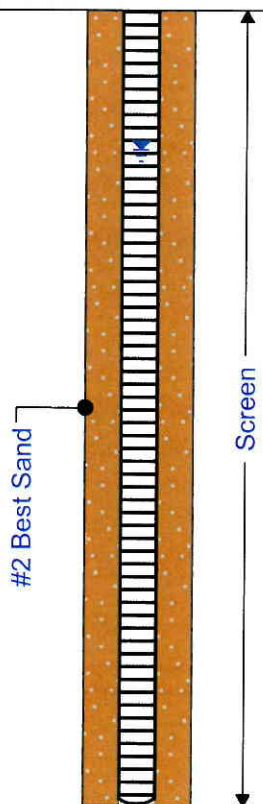
Casing Length: 30 feet

Water Level - Static: 1,197.71

Location: Dunbar, PA

Screen Length: 20 feet

Gauging Date: 11/28/11

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
32	11						
34							
36							
38							
40		Gray Shale					
42		Coal wet					
44		Gray Shale					
46		Coal					
48		Gray Siltstone					
50		Bottom of Borehole					
52							
54	15						
56							
58							
60							
	17						

Drilled By: Eichelbergers Drilling

Borehole Diameter: 6-inch

Log By: Jared Thorn

Drill Method: Air Rotary

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 2 of 2

Slot Size: 0.010-inch

WELL CONSTRUCTION LOG

Borehole: **SB-14/MW-14S**

Total Depth: **30 feet**

Drill Date: **12/28/2010**

Project: **Former Route 119 Amoco**

Diameter: **2-inch**

Casing Elevation: **1,231.26**

Client: **Mr. and Mrs. Tim Shell**

Casing Length: **15 feet**

Water Level - Static: **1,216.39**

Location: **Dunbar, PA**

Screen Length: **15 feet**

Gauging Date: **1/28/11**

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					
0		Limestone Gravel					
2		Light Brown Silty Clay	SS-1	Hand Clear	100	0.0	
4		Gray Silty Clay; with abundant highly weathered gray shale fragments.	SS-2	Hand Clear	100	0.0	
4			SS-3	Hand Clear	100	0.0	
6		Light Brown Clay and Silt; dry with abundant highly weathered gray shale fragments, spoon refusal at 8 feet.	SS-4	NA	100	0.0	
8			SS-5	NA	100	0.0	
8		Gray Siltstone					
10							
12							
14							
16							
18		Dark Gray Shale wet at 18-19 feet.					
20							
22		Gray Siltstone					
24							
26		Dark Gray Shale					
28		Gray Siltstone					
30		Bottom of borehole at 30 feet.					
32							

Drilled By: **Eichelbergers, Inc.**

Borehole Diameter: **6.25-inch**

Log By: **Jared Thorn**

Drill Method: **Air Rotary**

Type: **PVC**

* Sample submitted for laboratory analysis

Sheet: **1 of 1**

Slot Size: **0.010-inch**

WELL CONSTRUCTION LOG

Borehole: SB-15/MW-15S

Total Depth: 30 feet

Drill Date: 12/28/2010

Project: Former Route 119 Amoco

Diameter: 2-inch

Casing Elevation: 1,232.90

Client: Mr. and Mrs. Tim Shell

Casing Length: 15 feet

Water Level - Static: 1,216.07

Location: Dunbar, PA

Screen Length: 15 feet

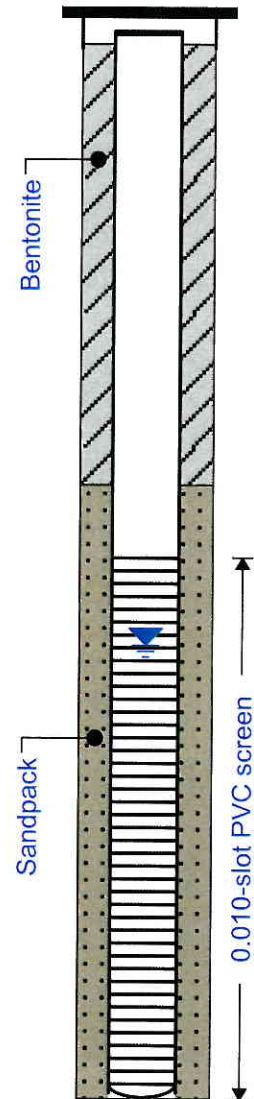
Gauging Date: 1/28/11

SUBSURFACE PROFILE

SAMPLE

Well Completion Details

Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)
0		Ground Surface				
0		Topsoil and Limestone Gravel	SS-1	Hand Clear	100	0.0
2		Light Brown Silty Clay	SS-2	Hand Clear	100	0.0
4			SS-3	Hand Clear	100	0.0
6			SS-4	NA	83	0.0
8		Gray Clay and Silt; with abundant highly weathered gray shale fragments, spoon refusal at 9 feet.	SS-5	NA	100	0.0
10		Dark Gray Shale				
12						
14		Gray Siltstone				
16						
18						
20						
22		Black Shale				
24		Gray Siltstone				
26		Black Shale wet at 24 feet.				
28		Gray Siltstone				
30		Bottom of borehole.				
32						



Drilled By: Eichelbergers, Inc.

Borehole Diameter: 6.25-inch

Log By: Jared Thorn

Drill Method: Air Rotary

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 1 of 1

Slot Size: 0.010-inch

WELL CONSTRUCTION LOG

Borehole: SB-16/MW-16

Total Depth: 60 feet

Drill Date: 12/29/10

Project: Former Route 119 Amoco

Diameter: 6-inch

Casing Elevation: 1,233.64

Client: Mr. and Mrs. Tim Shell

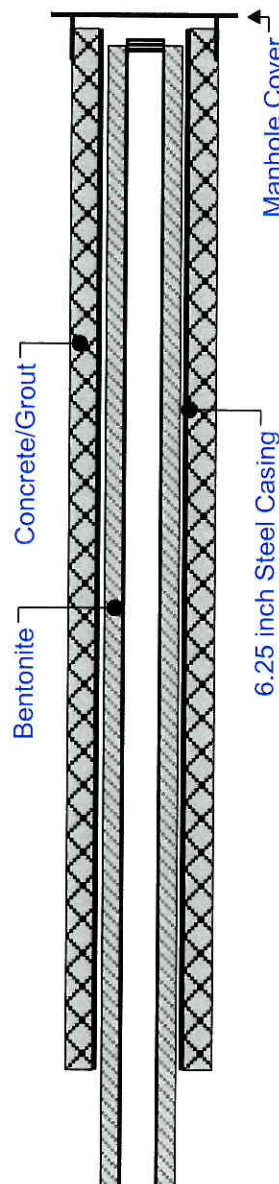
Casing Length: 45 feet

Water Level - Static: 1,197.88

Location: Dunbar, PA

Screen Length: 15 feet

Gauging Date: 1/28/11

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					 Manhole Cover Concrete/Grout Bentonite 6.25 inch Steel Casing
0		Topsoil and Limestone Gravel		No samples			
2		Light Brown Silty Clay;		collected			
4				based on			
6				proximity to			
6				SB-15			
8		Gray Clay and Silt;					
10		with abundant highly weathered gray shale.					
12		Gray Shale;					
12		highly weathered.					
14		Gray Siltstone					
16							
18							
20							
22		Black Shale					
24		Gray Siltstone					
24		Black Shale					
24		Gray Siltstone					
26							
28							
30							
32							
34							

Drilled By: Eichelbergers, Inc.

Borehole Diameter: 6-inch

Log By: Jared Thorn

Drill Method: Air Rotary

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 1 of 2

Slot Size: 0.010-inch

WELL CONSTRUCTION LOG

Borehole: **SB-16/MW-16**

Total Depth: **60 feet**

Drill Date: **12/29/10**

Project: **Former Route 119 Amoco**

Diameter: **6-inch**

Casing Elevation: **1,233.64**

Client: **Mr. and Mrs. Tim Shell**

Casing Length: **45 feet**

Water Level - Static: **1,197.88**

Location: **Dunbar, PA**

Screen Length: **15 feet**

Gauging Date: **1/28/11**

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
37		Gray Shale					
39		Gray Siltstone					
41		Gray Sandstone					
43		Dark Gray Shale					
45							
47							
49							
51							
53		Black Shale					
55		Gray Siltstone					
57							
59							
61		Bottom of Borehole					
63							
65							
67							
69							

Drilled By: **Eichelbergers, Inc.**

Borehole Diameter: **6-inch**

Log By: **Jared Thorn**

Drill Method: **Air Rotary**

Type: **PVC**

* Sample submitted for laboratory analysis

Sheet: **2 of 2**

Slot Size: **0.010-inch**

WELL CONSTRUCTION LOG

Borehole: SB-17/MW-17

Total Depth: 55 feet

Drill Date: 12/29/10

Project: Former Route 119 Amoco

Diameter: 6-inch

Casing Elevation: 1,231.48

Client: Mr. and Mrs. Tim Shell

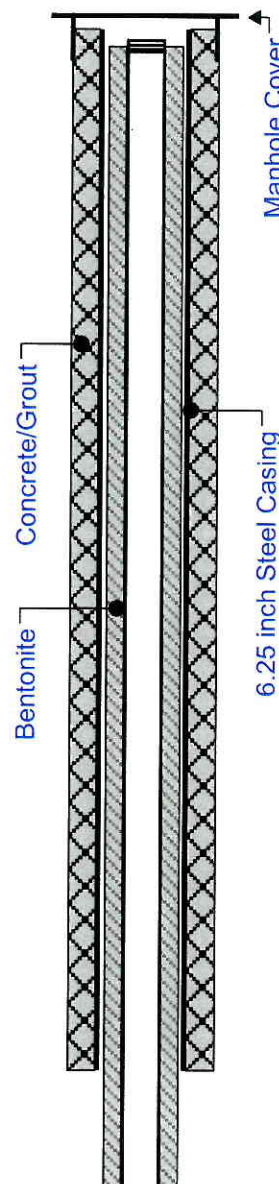
Casing Length: 40 feet

Water Level - Static: 1,192.02

Location: Dunbar, PA

Screen Length: 15 feet

Gauging Date: 1/28/11

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
0		Ground Surface					 Manhole Cover Concrete/Grout Bentonite 6.25 inch Steel Casing
0		Limestone Gravel					
2		Light Brown Silty Clay;					
4		Gray Silty Clay;					
4		with highly weathered gray shale.					
6		Light Brown Clay and Silt;					
6		abundant highly weathered gray					
8		shale fragments.					
8		Gray Siltstone					
10							
12							
14							
16							
18		Dark Gray Shale					
18		gray.					
20		dark gray.					
22		Gray Siltstone					
24							
26		Dark Gray Shale					
28		Gray Siltstone					
30							
32		Gray Sandstone					
34		Gray Shale					

Drilled By: Eichelbergers, Inc.

Borehole Diameter: 6-inch

Log By: Jared Thorn

Drill Method: Air Hammer

Type: PVC

* Sample submitted for laboratory analysis

Sheet: 1 of 2

Slot Size: 0.010-inch

WELL CONSTRUCTION LOG

Borehole: **SB-17/MW-17**

Total Depth: **55 feet**

Drill Date: **12/29/10**

Project: **Former Route 119 Amoco**

Diameter: **6-inch**

Casing Elevation: **1,231.48**

Client: **Mr. and Mrs. Tim Shell**

Casing Length: **40 feet**

Water Level - Static: **1,192.02**

Location: **Dunbar, PA**

Screen Length: **15 feet**

Gauging Date: **1/28/11**

SUBSURFACE PROFILE			SAMPLE				Well Completion Details
Depth	Symbol	Description	Number	Blows	Recovery (%)	Vapor (ppm)	
37	12						
39							
41							
43							
45	14	Black Shale and Coal; possible water at 46 feet.					
47							
49	16	Gray Siltstone					
51							
53							
55		Bottom of Borehole					
57	18						
59							
61							
63							
65	20						
67							
69							

Drilled By: **Eichelbergers, Inc.**

Borehole Diameter: **6-inch**

Log By: **Jared Thorn**

Drill Method: **Air Hammer**

Type: **PVC**

* Sample submitted for laboratory analysis

Sheet: **2 of 2**

Slot Size: **0.010-inch**

APPENDIX C

Waste Disposal Receipts



American Waste Management Services, Inc.
Subsidiary of Avalon Holdings Corporation
One American Way • Warren, Ohio 44484-5555 • (330) 856-8800

NON-HAZARDOUS WASTE MANIFEST

DOCUMENT NO. **190200**

SECTION 1

THIS SECTION TO BE COMPLETED BY GENERATOR:

COMPANY NAME FORMER 119 AMOCO	ADDRESS 1809 UNIVERSITY DRIVE	WASTE I.D. NUMBER 41744
	CITY DUNBAR STATE PA ZIP 15431	P.O. NUMBER
NAME OR DESCRIPTION OF WASTE SHIPPED GASOLINE CONTAMINATED SOIL 3 DM		
FACILITY APPROVAL # 37395		
COMMENTS/FACILITY APPROVAL #		

IN CASE OF AN EMERGENCY OR SPILL CONTACT	NAME DOREEN STAKOR	PHONE NO.	24-HR. EMERGENCY NO.
I hereby certify that the above named waste(s) are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the DOT and the EPA.		GENERATOR SIGNATURE <i>[Signature]</i>	DATE 1-17-08

SECTION 2

THIS SECTION TO BE COMPLETED BY THE HAULER/TRANSPORTER:

COMPANY NAME Penn Ohio	ADDRESS 4813 WOODMAN DR ASHTABURG, OH 44014	PHONE NO. (440) 992-7906		
VEHICLE I.D. NO. PA 03260	STATE OH	BOX NUMBER-IN	BOX NUMBER-OUT	JOB NO.
I hereby certify that the above described wastes were accepted for transportation at the producer's site and delivered to and off-loaded at the waste facility, both as listed hereupon.		PRINT DRIVER'S NAME THOMAS L. BRATTON	DATE 1-17-08	
		DRIVER'S SIGNATURE <i>[Signature]</i>		

SECTION 3

THIS SECTION TO BE COMPLETED BY RECEIVER AT DISPOSAL SITE:

FACILITY NAME WM/AMERICAN LANDFILL	ADDRESS 7916 CHAPEL STREET SE WAYNESBURG, OH 44688	PHONE NO. (330) 866-3265
COMMENTS		
I hereby certify that the above described wastes were delivered to this Facility, that the Facility is authorized and permitted to receive such wastes.	AUTHORIZED SIGNATURE <i>[Signature]</i>	DATE 1-21-08

SECTION 4

ASBESTOS (Operator to complete)

"Operator" is defined as the company which owns, leases, operates, controls or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.	
OPERATOR'S NAME	PHONE NUMBER
OPERATOR'S ADDRESS	

RECOMMENDED SPECIAL HANDLING INSTRUCTIONS AND ADDITIONAL INFORMATION	☐ FRIABLE	☐ NON-FRIABLE
--	----------------------------------	--------------------------------------

Operator's Certification: I hereby warrant and declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and domestic law, regulations, ordinances, orders, rules and/or standards.

Operator's Name (print/type)	Signature of Operator's Authorized Agent	Date
RESPONSIBLE AGENCY NAME AND ADDRESS		

QUANTITY TO BE DETERMINED AT DISPOSAL FACILITY
DISPOSAL FACILITY INVOICING - COPY 4



American Waste Management Services, Inc.
Subsidiary of Avalon Holdings Corporation
One American Way • Warren, Ohio 44484-5555 • (330) 856-8800

NON-HAZARDOUS WASTE MANIFESTDOCUMENT NO. **208924****SECTION 1****THIS SECTION TO BE COMPLETED BY GENERATOR:**

COMPANY NAME FORNER LLY PROCO	ADDRESS 1809 UNIVERSITY DRIVE	WASTE I.D. NUMBER 41744
	CITY DUNBAR STATE PA ZIP 15431	P.O. NUMBER
NAME OR DESCRIPTION OF WASTE SHIPPED GASOLINE CONTAMINATED SOIL 4 DM		
COMMENTS/FACILITY APPROVAL # FACILITY APPROVAL #137395		

IN CASE OF AN EMERGENCY OR SPILL CONTACT	NAME DOREEN STOKOR	PHONE NO.	24-HR. EMERGENCY NO.
I hereby certify that the above named waste(s) are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the DOT and the EPA.		GENERATOR SIGNATURE	DATE

SECTION 2**THIS SECTION TO BE COMPLETED BY THE HAULER/TRANSPORTER:**

COMPANY NAME The Pennsylvania Dept of Transportation	ADDRESS 4413 W. 10th St. Erie, PA 16510	PHONE NO. (814) 763-2100		
VEHICLE I.D. NO. PAV3260	STATE PA	BOX NUMBER-IN	BOX NUMBER-OUT	JOB NO.
I hereby certify that the above described wastes were accepted for transportation at the producer's site and delivered to and off-loaded at the waste facility, both as listed hereupon.		PRINT DRIVER'S NAME Thomas L. Portier	DATE 11-2-08	
		DRIVER'S SIGNATURE THL Portier		

SECTION 3**THIS SECTION TO BE COMPLETED BY RECEIVER AT DISPOSAL SITE:**

FACILITY NAME UN/AMERICAN LANDFILL	ADDRESS 7916 CHAPEL STREET SE WAYNESBURG, OH 44688	PHONE NO. (330) 866-3265
COMMENTS		
I hereby certify that the above described wastes were delivered to this Facility, that the Facility is authorized and permitted to receive such wastes.		AUTHORIZED SIGNATURE
		DATE

SECTION 4**ASBESTOS (Operator to complete)**

"Operator" is defined as the company which owns, leases, operates, controls or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

OPERATOR'S NAME	PHONE NUMBER
OPERATOR'S ADDRESS	

RECOMMENDED SPECIAL HANDLING INSTRUCTIONS AND ADDITIONAL INFORMATION ☐ FRIABLE ☐ NON-FRIABLE

Operator's Certification: I hereby warrant and declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and domestic law, regulations, ordinances, orders, rules and/or standards.

Operator's Name (print/type)	Signature of Operator's Authorized Agent	Date
RESPONSIBLE AGENCY NAME AND ADDRESS		

QUANTITY TO BE DETERMINED AT DISPOSAL FACILITY
GENERATOR/CUSTOMER - COPY 5

JOB WORK ORDER

JW00105416



McCUTCHEON ENTERPRISES, INCORPORATED

250 PARK ROAD, APOLLO, PENNSYLVANIA 15613-8730

PH: (724) 568-3623 • FAX: (724) 568-2571

WebSite: www.completewastemgmt.com

Bill To: Letterle & Associates LLC
4299 Mindy Rice
2859 Oxford Blvd Suite 110
Allison Park, PA 15101
(412) 486-0600

Location: Former 119 Amoco
23 1809 University Dr.
Dunbar, PA 15431

Originator	LORIM	Customer Contact	Pete Weir
Project Manager	505-Ted McCutcheon	Contact Phone	(412) 486-0600
Salesperson	Ted McCutcheon	Site Contact	Jared Thorn
Promised Date	02/15/2011	Site Phone	(724) 809-9092
Scheduled Date	02/15/2011	Project Controller #	310070TRA
Time of Service	08:00 AM		
SSE			

MEI Project # 31-0070 Client PO # _____

Type/Qty of Material pickup 16 drums waste

Work Required Pickup 16 drums and transport to MEI-BSF for disposal

Destination/Disposal Facility	
Company Name	McCutcheon Ent. Biosolids Treatment Facility
Address Line 1	250 Park Road
City/State/Zip	Apollo, PA 15613
Phone	(724) 568-3623

Disposal Date	Disposal Time From	00:00	Disposal Time To	00:00
Service Date: <u>2/15/11</u>	Personnel #	<u>501, 537</u>		
Truck # <u>BV-1</u>	Manifest #	<u>023200</u>		
Waste Type: Residual	Generator Type: Commercial	Paperwork Required	Non-Haz Manifest Labels	
# of Drums <u>16</u>	Start Time <u>6:45</u>			
Weight at MEI _____	In Site <u>8:30</u>			
	Out Site <u>9:20</u>			
	In Dest _____			
	Out Dest _____			
	Finish Time _____			

Authorized Signature: _____

[Handwritten Signature]



McCutcheon Enterprises, Inc.
250 Park Road
Apollo, PA 15613
(724)568-3623 Fax (724)568-2571
www.completewastemgmt.com

00076082

Non-Hazardous Waste Manifest		1. Generator's US EPA ID No.		Manifest Document No. 023200		2. Page 1 of 1		JWC00105416							
3. Generator's Name and Mailing Address Former Route 119 Amoco 1509 University Dr. Durban, PA 15431						MC023200									
4. Generator's Phone (412) 426-0600						B. State Generator's ID									
5. Transporter 1 Company Name McCutcheon Enterprises Inc						C. State Trans. ID									
6. US EPA ID Number PAD013826847						D. Transporter's Phone (724) 568-3623									
7. Transporter 2 Company Name						E. State Trans. ID									
8. US EPA ID Number						F. Transporter's Phone ()									
9. Designated Facility Name and Site Address McCutcheon Ent. Biosolids Treatment Facility 250 Park Road Apollo, PA 15613						G. State Facility's ID									
10. US EPA ID Number PAD013826847						H. Facility's Phone (724) 568-3623									
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM						12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		L Waste No.			
a. waste soil						16 DM 12800 T		9 9 9							
b.															
c.															
d.															
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above									
a. 020211-00003158						c.		a.		c.					
b.						d.		b.		d.					
15. Special Handling Instructions and Additional Information															
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. I hereby certify that the above named material is not hazardous waste as defined by 40 CFR Part 261 or any applicable state law.															
Printed/Typed Name James W. Hoyer Gary L. Kain						Signature <i>[Signature]</i> <i>[Signature]</i>						Month Day Year 12/15/11			
17. Transporter 1 Acknowledgement of Receipt of Materials						Printed/Typed Name Gary L. Kain						Signature <i>[Signature]</i>		Month Day Year 12/15/11	
18. Transporter 2 Acknowledgement of Receipt of Materials						Printed/Typed Name						Signature		Month Day Year	
19. Discrepancy Indication Space															
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.															
Printed/Typed Name						Signature						Month Day Year			

GENERATOR COPY

SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES



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 Dr.
Dunbar, PA 15431

Document No: MC023200
Approval Number: 020211-00003158
Acceptance Date: 02/15/2011
Quantity: 16 drums

*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.*

Signature: *Owen Biltz*
Name: Owen Biltz
Title: Facility Compliance Manager
Date: 02/15/2011

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

APPENDIX D

Well Abandonment Forms

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd
Middletown, PA 17057
717-702-2027

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 11/4/1997	Driller Well ID: RTE 119 RW-1 Local Permit #: Original Well By: Advanced Drilling, Inc. Drilling Method: AIR ROTARY		
Owner: Shell Address of Well: State Route 119 Dunbar, Pa Zipcode: County: FAYETTE Municipality: DUNBAR Municipality Type: T Coordinate Method: GPS - Global Positioning System Quadrangle: Latitude: 39.96795 Longitude: -79.64613			
<table style="width: 100%;"> <tr> <td style="width: 50%;"> Well Depth (ft): 45 Depth to Bedrock (ft): 8 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED </td> <td style="width: 50%;"> Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER </td> </tr> </table>		Well Depth (ft): 45 Depth to Bedrock (ft): 8 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER
Well Depth (ft): 45 Depth to Bedrock (ft): 8 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER		

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 3	Unit 2: Silty sand and gravel.
Unit Top 3: 3	Unit Bottom 3: 8	Unit 3: Gray sand and weathered shale.
Unit Top 4: 8	Unit Bottom 4: 45	Unit 4: Gray shale.

BOREHOLE

Section 1:	Top:	0	Bottom:	11	Diameter:	10
Section 2:	Top:	11	Bottom:	45	Diameter:	8

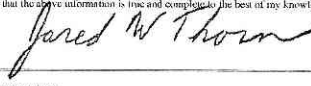
CASING

Casing 1:						
Top:	0	Bottom:	11	Diameter:	8	Material: STEEL
Seal(Grout) 1:						
Top:	0	Bottom:	11	Type:	GROUT WITH BENTONITE	
Casing 2:						
Top:	0	Bottom:	25	Diameter:	6	Material: PVC OR OTHER PLASTIC
Seal(Grout) 2:						
Top:	0	Bottom:	17	Type:	GROUT WITH BENTONITE	

SCREEN/SLOT

Screen 1:	Top:	25	Bottom:	45	Diameter:	6
	Type:	PERFORATED, POROUS, OR SLOTTED CASING				
	Material:	PLASTIC				
	Packing:	Screened Sand				
					Slot Size:	0.02

I hereby certify that the above information is true and complete to the best of my knowledge and belief.



Driller's Signature (required) Date

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd
Middletown, PA 17057
717-702-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 8/29/1997	Driller Well ID: RTE 119 MW-2 Local Permit #: Original Well By: Advanced Drilling, Inc. Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle:	
Zipcode: Municipality Type: T Latitude: 39.96792 Longitude: -79.64606	
Well Depth (ft): 41 Depth to Bedrock (ft): 8 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 8	Unit 2: Weathered shale.
Unit Top 3: 8	Unit Bottom 3: 41	Unit 3: Gray shale.

BOREHOLE

Section 1:	Top:	0	Bottom:	10	Diameter:	8
Section 2:	Top:	10	Bottom:	41	Diameter:	6

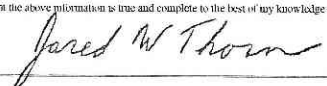
CASING

Casing 1:			
Top:	0	Bottom:	16
		Diameter:	4
		Material: PVC OR OTHER PLASTIC	
Seal(Grout) 1:			
Top:	1	Bottom:	13
		Type:	GROUT WITH BENTONITE
Casing 2:			
Top:	0	Bottom:	10
		Diameter:	6
		Material: STEEL	
Seal(Grout) 2:			
Top:	1	Bottom:	10
		Type:	GROUT WITH BENTONITE

SCREEN/SLOT

Screen 1:	Top: 16	Bottom: 41	Diameter: 4
	Type: PERFORATED, POROUS, OR SLOTTED CASING		
	Material: PLASTIC		
	Packing: Screened Sand		
	Slot Size: 0.01		

I hereby certify that the above information is true and complete to the best of my knowledge and belief.



Driller's Signature (required) _____ Date _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd
Middletown, PA 17057
717-702-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 6/2/1998	Driller Well ID: RTE 119 SVE-1 Local Permit #: Original Well By: Advanced Drilling Inc. Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle:	
Zipcode: Municipality Type: T Latitude: 39.96786 Longitude: -79.64607	
Well Depth (ft): 35 Depth to Bedrock (ft): 8 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 3	Unit 2: Silty sand and gravel.
Unit Top 3: 3	Unit Bottom 3: 8	Unit 3: Gray sand and weathered shale.
Unit Top 4: 8	Unit Bottom 4: 35	Unit 4: Gray shale.

BOREHOLE

Section 1:	Top: 0	Bottom: 35	Diameter: 6
------------	---------------	-------------------	--------------------

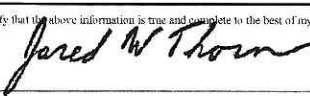
CASING

Casing 1:			
Top: 0	Bottom: 3	Diameter: 2	Material: PVC OR OTHER PLASTIC
Seal(Grout) 1:			
Top: 0	Bottom: 2	Type: BENTONITE CHIPS/PELLETS	

SCREEN/SLOT

Screen 1:	Top: 3	Bottom: 35	Diameter: 2
Type: PERFORATED, POROUS, OR SLOTTED CASING			
Material: PLASTIC			
Packing: Screened Sand			
Slot Size: 0.02			

I hereby certify that the above information is true and complete to the best of my knowledge and belief.



Driller's Signature (required) _____ Date _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd.
Middletown, PA 17057
717-762-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 5/5/2006	Driller Well ID: RTE 119 MW-9 Local Permit #: Original Well By: Terra Testing, Inc. Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle:	
Zipcode: Municipality Type: T Latitude: 39.96779 Longitude: -79.6463	
Well Depth (ft): 55 Depth to Bedrock (ft): 5 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 5	Unit 2: Light brown silty clay.
Unit Top 3: 5	Unit Bottom 3: 23	Unit 3: Gray shale.
Unit Top 4: 23	Unit Bottom 4: 26	Unit 4: Gray siltstone.
Unit Top 5: 26	Unit Bottom 5: 43	Unit 5: Gray shale.
Unit Top 6: 43	Unit Bottom 6: 44	Unit 6: Coal.
Unit Top 7: 44	Unit Bottom 7: 55	Unit 7: Light gray siltstone.

BOREHOLE

Section 1:	Top: 0	Bottom: 55	Diameter: 6
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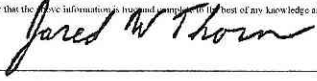
CASING

Casing 1:			
Top:	0	Bottom: 30	Diameter: 2 Material: PVC OR OTHER PLASTIC
Seal(Grout) 1:			
Top:	0	Bottom: 30	Type: GROUT WITH BENTONITE
Casing 2:			
Top:	30	Bottom: 40	Diameter: 2 Material: PVC OR OTHER PLASTIC
Seal(Grout) 2:			
Top:	30	Bottom: 38	Type: BENTONITE CHIPS/PELLETS

SCREEN/SLOT

Screen 1:	Top: 40	Bottom: 55	Diameter: 2
Type: PERFORATED, POROUS, OR SLOTTED CASING			
Material: PLASTIC			
Packing: Screened Sand			
Slot Size: 0.02			

I hereby certify that the above information is true and complete to the best of my knowledge and belief.



Driller's Signature (required) _____ Date: _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schuylhouse Rd
Middletown, PA 17057
717-782-2617

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC	Driller Well ID: RTE 119 DW-1
Driller License: 4494	Local Permit #:
Type of Activity: Well Abandonment	Original Well By: LG Hefager Drilling
Reason for Abandonment: Well was unused	Drilling Method: AIR ROTARY
Date Drilled: 7/27/2001	
Owner: Shell	
Address of Well: State Route 119 Dunbar, Pa	Zipcode:
County: FAYETTE	
Municipality: DUNBAR	Municipality Type: T
Coordinate Method: GPS - Global Positioning System	
Quadrangle:	Latitude: 39.96775 Longitude: -79.64638
Well Depth (ft): 103	Well Finish: PERFORATED OR SLOTTED
Depth to Bedrock (ft): 3	Did Not Encounter Bedrock:
Well Yield (gpm):	Yield Measure Method:
Static Water Level: (ft below land surface)	Water level after yield test: (ft below land surface)
Length of Yield Test: (minutes)	Saltwater Zone (ft):
Use of Well: ABANDONED	Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 3	Unit 2: Gravel fill.
Unit Top 3: 3	Unit Bottom 3: 11	Unit 3: Gray shale.
Unit Top 4: 11	Unit Bottom 4: 12	Unit 4: Gray mudstone.
Unit Top 5: 12	Unit Bottom 5: 13	Unit 5: Gray limestone.
Unit Top 6: 13	Unit Bottom 6: 14	Unit 6: Gray shale.
Unit Top 7: 14	Unit Bottom 7: 18	Unit 7: Gray siltstone.
Unit Top 8: 18	Unit Bottom 8: 19	Unit 8: Limestone.
Unit Top 9: 19	Unit Bottom 9: 44	Unit 9: Gray siltstone.
Unit Top 10: 44	Unit Bottom 10: 45	Unit 10: Gray shale.
Unit Top 11: 45	Unit Bottom 11: 46	Unit 11: Gray mudstone.
Unit Top 12: 46	Unit Bottom 12: 47	Unit 12: Gray limestone.
Unit Top 13: 47	Unit Bottom 13: 48	Unit 13: Gray mudstone.
Unit Top 14: 48	Unit Bottom 14: 58	Unit 14: Gray limestone.
Unit Top 15: 58	Unit Bottom 15: 59	Unit 15: Gray mudstone.
Unit Top 16: 59	Unit Bottom 16: 66	Unit 16: Gray limestone.
Unit Top 17: 66	Unit Bottom 17: 74	Unit 17: Gray mudstone.
Unit Top 18: 74	Unit Bottom 18: 81	Unit 18: Gray sandstone.
Unit Top 19: 81	Unit Bottom 19: 87	Unit 19: Gray siltstone.
Unit Top 20: 87	Unit Bottom 20: 103	Unit 20: Gray sandstone.

BOREHOLE

Section 1:	Top: 0	Bottom: 55	Diameter: 12
Section 2:	Top: 55	Bottom: 103	Diameter: 8

CASING

Casing 1:				
Top:	0	Bottom:	55	Diameter: 9 Material: STEEL
Seal(Grout) 1:				
Top:	0	Bottom:	55	Type: GROUT WITH BENTONITE
Casing 2:				
Top:	0	Bottom:	93	Diameter: 4 Material: PVC OR OTHER PLASTIC
Seal(Grout) 2:				
Top:	1	Bottom:	91	Type: GROUT WITH BENTONITE

SCREEN/SLOT

Screen 1:	Top: 93	Bottom: 103	Diameter: 4
	Type: PERFORATED, POROUS, OR SLOTTED CASING		
	Material: PLASTIC		Slot Size: 0.01
	Packing: Screened Sand		

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Jared W. Thorne

Driller's Signature (required) Date:

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd
Middletown, PA 17057
717-702-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 6/2/1998	Driller Well ID: RTE 119 SVE-2 Local Permit #: Original Well By: Advanced Drilling Inc. Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle: Latitude: 39.96777 Longitude: -79.64616	
Well Depth (ft): 35 Depth to Bedrock (ft): 7 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	
Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER	

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 4	Unit 2: Brown clay.
Unit Top 3: 1	Unit Bottom 3: 6	Unit 3: Clayey silt.
Unit Top 4: 6	Unit Bottom 4: 7	Unit 4: Weathered siltstone.
Unit Top 5: 6	Unit Bottom 5: 11	Unit 5: Gray-Brown siltstone.
Unit Top 6: 11	Unit Bottom 6: 18	Unit 6: Gray shale.
Unit Top 7: 11	Unit Bottom 7: 19	Unit 7: Black shale.
Unit Top 8: 19	Unit Bottom 8: 25	Unit 8: Gray shale.
Unit Top 9: 25	Unit Bottom 9: 27	Unit 9: Gray sandstone.
Unit Top 10: 27	Unit Bottom 10: 35	Unit 10: Gray shale.

BOREHOLE

Section 1:	Top: 0	Bottom: 35	Diameter: 6
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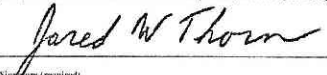
CASING

Casing 1:			
Top: 0	Bottom: 3	Diameter: 2	Material: PVC OR OTHER PLASTIC
Seal(Grout) 1:			
Top: 0	Bottom: 2	Type: BENTONITE CHIPS/PELLETS	

SCREEN/SLOT

Screen 1:	Top: 3	Bottom: 35	Diameter: 2
	Type: PERFORATED, POROUS, OR SLOTTED CASING		
	Material: PLASTIC		
	Packing: Screened Sand		
			Slot Size: 0.02

I hereby certify that the above information is true and complete to the best of my knowledge and belief



Driller's Signature (required) _____ Date: _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd
Middletown, PA 17057
717-702-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 6/2/1998	Driller Well ID: Rte 119 SVE-3 Local Permit #: Original Well By: Advanced Drilling Inc. Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle:	
Zipcode: Municipality Type: T Latitude: 39.96773 Longitude: -79.64629	
Well Depth (ft): 35 Depth to Bedrock (ft): 5 Well Yield (gpm): Static Water Level: <i>(ft below land surface)</i> Length of Yield Test: <i>(minutes)</i> Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: <i>(ft below land surface)</i> Saltwater Zone (ft): Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 5	Unit 2: Light brown silty clay.
Unit Top 3: 5	Unit Bottom 3: 23	Unit 3: Gray shale.
Unit Top 4: 23	Unit Bottom 4: 26	Unit 4: Gray siltstone.
Unit Top 5: 26	Unit Bottom 5: 35	Unit 5: Gray Shale.

BOREHOLE

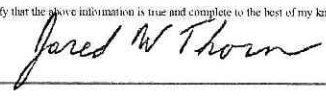
Section 1:	Top: 0	Bottom: 35	Diameter: 6
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CASING

Casing 1:			
Top: 0	Bottom: 3	Diameter: 2	Material: PVC OR OTHER PLASTIC
Seal(Grout) 1:			
Top: 0	Bottom: 2	Type: BENTONITE CHIPS/PELLETS	

SCREEN/SLOT

Screen 1:	Top: 3	Bottom: 35	Diameter: 2
Type: PERFORATED, POROUS, OR SLOTTED CASING			
Material: PLASTIC			
Packing: Screened Sand			
Slot Size: 0.02			

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

 Driller's Signature (required) _____ Date _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoonhouse Rd
Middletown, PA 17057
717-702-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 6/2/1998	Driller Well ID: RTE 119 AS-1 Local Permit #: Original Well By: Advanced Drilling, Inc. Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle:	
Zipcode: Municipality Type: T Latitude: 39.96787 Longitude: -79.64613	
Well Depth (ft): 40 Depth to Bedrock (ft): 8 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 3	Unit 2: Silty sand and gravel.
Unit Top 3: 3	Unit Bottom 3: 8	Unit 3: Gray sand and weathered shale.
Unit Top 4: 8	Unit Bottom 4: 40	Unit 4: Gray shale.

BOREHOLE

Section 1:	Top: 0	Bottom: 40	Diameter: 6
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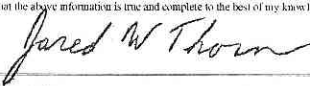
CASING

Casing 1:			
Top: 0	Bottom: 32	Diameter: 2	Material: PVC OR OTHER PLASTIC
Seal(Grout) 1:			
Top: 3	Bottom: 32	Type: GROUT WITH BENTONITE	
Casing 2:			
Top: 32	Bottom: 37	Diameter: 2	Material: PVC OR OTHER PLASTIC
Seal(Grout) 2:			
Top: 32	Bottom: 36	Type: BENTONITE CHIPS/PELLETS	

SCREEN/SLOT

Screen 1:	Top: 37	Bottom: 40	Diameter: 2
Type: PERFORATED, POROUS, OR SLOTTED CASING			
Material: PLASTIC			
Packing: Screened Sand			
Slot Size: 0.02			

I hereby certify that the above information is true and complete to the best of my knowledge and belief.



Driller's Signature (required) _____ Date _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoellkopf Rd
Middletown, PA 17057
717-782-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC Driller License: 4494 Type of Activity: Well Abandonment Reason for Abandonment: Well was unused Date Drilled: 6/2/1998	Driller Well ID: RTE 119 AS-2 Local Permit #: Original Well By: Advanced Drilling, Inc Drilling Method: AIR ROTARY
Owner: Shell Address of Well: State Route 119 Dunbar, Pa County: FAYETTE Municipality: DUNBAR Coordinate Method: GPS - Global Positioning System Quadrangle:	
Zipcode: Municipality Type: T Latitude: 39.9677 Longitude: -79.64637	
Well Depth (ft): 40 Depth to Bedrock (ft): 5 Well Yield (gpm): Static Water Level: (ft below land surface) Length of Yield Test: (minutes) Use of Well: ABANDONED	Well Finish: PERFORATED OR SLOTTED Did Not Encounter Bedrock: Yield Measure Method: Water level after yield test: (ft below land surface) Saltwater Zone (ft): Use of Water: OTHER

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 5	Unit 2: Silty clay.
Unit Top 3: 5	Unit Bottom 3: 23	Unit 3: Gray shale.
Unit Top 4: 23	Unit Bottom 4: 26	Unit 4: Gray siltstone.
Unit Top 5: 26	Unit Bottom 5: 40	Unit 5: Gray shale.

BOREHOLE

Section 1:	Top: 0	Bottom: 40	Diameter: 6
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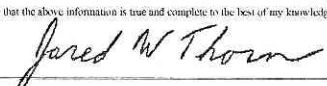
CASING

Casing 1:			
Top:	0	Bottom: 32	Diameter: 2 Material: PVC OR OTHER PLASTIC
Seal(Grout) 1:			
Top:	3	Bottom: 32	Type: GROUT WITH BENTONITE
Casing 2:			
Top:	32	Bottom: 37	Diameter: 2 Material: PVC OR OTHER PLASTIC
Seal(Grout) 2:			
Top:	32	Bottom: 36	Type: BENTONITE CHIPS/PELLETS

SCREEN/SLOT

Screen 1:	Top: 37	Bottom: 40	Diameter: 2
Type: PERFORATED, POROUS, OR SLOTTED CASING			
Material: PLASTIC			
Slot Size: 0.02			
Packing: Screened Sand			

I hereby certify that the above information is true and complete to the best of my knowledge and belief.



Driller's Signature (required) _____ Date: _____

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
WATER WELL LICENSING/WATER WELL INVENTORY SECTION
3240 Schoolhouse Rd.
Middletown, PA 17057
717-702-2017

WATER WELL COMPLETION REPORT

Well Driller: EARTHSYSTEMS, LLC	Driller Well ID: RTE 119 RW-2
Driller License: 4494	Local Permit #:
Type of Activity: Well Abandonment	Original Well By: Advanced Drilling Inc.
Reason for Abandonment: Well was unused	Drilling Method: AIR ROTARY
Date Drilled: 11/4/1997	
Owner: Shell	
Address of Well: State Route 119 Dunbar, Pa	Zipcode:
County: FAYETTE	
Municipality: DUNBAR	Municipality Type: T
Coordinate Method: GPS - Global Positioning System	
Quadrangle:	Latitude: 39.96769 Longitude: -79.64626
Well Depth (ft): 43	Well Finish: PERFORATED OR SLOTTED
Depth to Bedrock (ft): 9	Did Not Encounter Bedrock:
Well Yield (gpm):	Yield Measure Method:
Static Water Level: (ft below land surface)	Water level after yield test: (ft below land surface)
Length of Yield Test: (minutes)	Saltwater Zone (ft):
Use of Well: ABANDONED	Use of Water: OTHER

DRILLER'S LOG

<u>UNIT TOP</u>	<u>UNIT BOTTOM</u>	<u>DESCRIPTION OF UNITS PENETRATED</u>
Unit Top 1: 0	Unit Bottom 1: 1	Unit 1: Asphalt and sub-base.
Unit Top 2: 1	Unit Bottom 2: 6	Unit 2: Sand and gravel.
Unit Top 3: 6	Unit Bottom 3: 9	Unit 3: Gray sand and weathered shale.
Unit Top 4: 9	Unit Bottom 4: 43	Unit 4: Gray Shale.

BOREHOLE

Section 1:	Top: 0	Bottom: 13	Diameter: 10
Section 2:	Top: 13	Bottom: 43	Diameter: 8

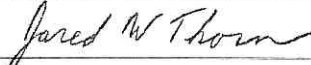
CASING

Casing 1:				
Top: 0	Bottom: 13	Diameter: 8	Material: STEEL	
Seal(Grout) 1:				
Top: 1	Bottom: 13	Type: GROUT WITH BENTONITE		
Casing 2:				
Top: 0	Bottom: 23	Diameter: 6	Material: PVC OR OTHER PLASTIC	
Seal(Grout) 2:				
Top: 1	Bottom: 16	Type: GROUT WITH BENTONITE		

SCREEN/SLOT

Screen 1:	Top: 23	Bottom: 43	Diameter: 6
	Type: PERFORATED, POROUS, OR SLOTTED CASING		
	Material: PLASTIC		Slot Size: 0.02
	Packing: Screened Sand		

I hereby certify that the above information is true and complete to the best of my knowledge and belief.


Driller's Signature (required) _____ Date _____

APPENDIX E

Laboratory Analytical Reports

March 04, 2009

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

RE: Project: 031 Rte 119
Pace Project No.: 305611

Dear Mr. Letterle:

Enclosed are the analytical results for sample(s) received by the laboratory on February 19, 2009. 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 Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 4

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



CERTIFICATIONS

Project: 031 Rte 119

Pace Project No.: 305611

Pennsylvania Certification IDs

Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Pennsylvania/NELAC Certification #: 65-282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Minnesota Certification #: 042-999-425
Michigan/PADEP Certification

Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Georgia Certification #: 968
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

REPORT OF LABORATORY ANALYSIS

Page 2 of 4

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SAMPLE ANALYTE COUNT

Project: 031 Rte 119
Pace Project No.: 305611

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
305611001	SB-13 SS-4 6-7'	ASTM D2974-87	DSC	1	PASI-PA
		EPA 8260	JEW	10	PASI-PA

REPORT OF LABORATORY ANALYSIS

Page 3 of 4

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ANALYTICAL RESULTS

Project: 031 Rte 119
Pace Project No.: 305611

Sample: SB-13 SS-4 6-7' Lab ID: 305611001 Collected: 02/17/09 13:00

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF
Benzene	ND	ug/kg	4.8	1
Ethylbenzene	ND	ug/kg	4.8	1
Isopropylbenzene (Cumene)	ND	ug/kg	4.8	1
Methyl-tert-butyl ether	ND	ug/kg	4.8	1
Naphthalene	ND	ug/kg	4.8	1
Toluene	ND	ug/kg	4.8	1
Xylene (Total)	ND	ug/kg	14.5	1
Percent Moisture	13.7	%	0.10	1

CHAIN-OF-CUSTODY / Analytical Request Document

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

[illegible]

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 05, 2-Feb-2007



Sample Condition Upon Receipt

Client Name: LetkoneProject # 305611Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ noPacking Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other

Thermometer Used

3

4

Type of Ice: Wet Blue None☐ Samples on ice, cooling process has begun

Cooler Temperature

5.9°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: JP 2/19/09

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: <u>SL</u>		
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: <u>VOA</u> , coliform, TOC, O&G, Wt-DRO (water)	☒ Yes ☐ No	Initial when completed <u>JP</u> Lot # of added preservative
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☒ N/A	15.
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	16.
Trip Blank Custody Seals Present	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required?

Y / N

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]Date: 2/19/09

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)

F-ALLC003-3, 11September2006



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

March 05, 2009

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

RE: Project: 031 Rte 119
Pace Project No.: 305618

Dear Mr. Letterle:

Enclosed are the analytical results for sample(s) received by the laboratory on February 19, 2009. 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 Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 4

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CERTIFICATIONS

Project: 031 Rte 119
Pace Project No.: 305618

Minnesota Certification IDs

Wisconsin Certification #: 999407970
Washington Certification #: C754
Tennessee Certification #: 02818
Pennsylvania Certification #: 68-00563
Oregon Certification #: MN200001
North Dakota Certification #: R-036
North Carolina Certification #: 530
New York Certification #: 11647
New Jersey Certification #: MN-002
Montana Certification #: MT CERT0092
Minnesota Certification #: 027-053-137

Maine Certification #: 2007029
Louisiana Certification #: LA080009
Louisiana Certification #: 03086
Kansas Certification #: E-10167
Iowa Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Arizona Certification #: AZ-0014
Alaska Certification #: UST-078

Pennsylvania Certification IDs

Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Pennsylvania/NELAC Certification #: 65-282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Minnesota Certification #: 042-999-425
Michigan/PADEP Certification

Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Georgia Certification #: 968
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 031 Rte 119

Pace Project No.: 305618

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
305618001	VP-4	TO-15	DB1	8	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Rte 119
Pace Project No.: 305618

Sample: VP-4 **Lab ID: 305618001** Collected: 02/17/09 13:00

Parameters	Results	Units	Report Limit	DF
Benzene	13.0	ppbv	1.0	1.93
Ethylbenzene	6.2	ppbv	1.0	1.93
Isopropylbenzene (Cumene)	ND	ppbv	0.96	1.93
Methyl-tert-butyl ether	ND	ppbv	1.9	1.93
Naphthalene	4.9	ppbv	0.96	1.93
Toluene	25.6	ppbv	1.0	1.93
m&p-Xylene	21.8	ppbv	1.9	1.93
o-Xylene	8.8	ppbv	1.0	1.93

Section A Required Client Information:		Section B Required Project Information:		Section C Invoicing Information:	
Company: <u>LetTelco Associates LLC</u>	Report To: <u>Same</u>	Attention:	Company Name:	Page: <u>1</u> of <u>1</u>	1183340
Address: <u>2559 Oxford Blvd Suite 100</u>	Copy To: <u>Same</u>				
<u>Allison Beck PA 15701</u>			Address:		
Email To: <u>NEC@ASynapse.net</u>	Purchase Order No.: <u>600</u>		Price Quote Reference:		
Phone: <u>412-486-0000</u>	Project Name: <u>RTE 119</u>		Price Project Manager: <u>Rachel Christner</u>		
Requested Due Date/TAT: <u>5/12/2004</u>	Project Number: <u>031</u>		Project Profits %:		
				REGULATORY AGENCY	
				☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☒ DUST ☐ RORA ☐ OTHER	
				Site Location	PA
				STATE:	

[illegible]

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

Client Name: Letterk

Project # 305618

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

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 3 4

Type of Ice: Wet Blue None

☐ Samples on ice, cooling process has begun

Cooler Temperature _____

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: JP 2/19/09

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: <u>AR</u>		
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 <u>JP</u> 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:

Shelley Christopher

Date: 2/19/09

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)

July 12, 2010

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

RE: Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Dear Mr. Letterle:

Enclosed are the analytical results for sample(s) received by the laboratory on June 22, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3029875001	VP-1	Air	06/21/10 13:30	06/22/10 12:40
3029875002	VP-2	Air	06/21/10 13:10	06/22/10 13:10
3029875003	VP-3	Air	06/21/10 12:45	06/22/10 12:40
3029875004	VP-4	Air	06/21/10 13:55	06/22/10 12:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3029875001	VP-1	TO-15	DB1	8	PASI-M
3029875002	VP-2	TO-15	DB1	8	PASI-M
3029875003	VP-3	TO-15	DB1	8	PASI-M
3029875004	VP-4	TO-15	DB1	8	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Sample: VP-1		Lab ID: 3029875001	Collected: 06/21/10 13:30		Received: 06/22/10 12:40		Matrix: Air		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15							
Benzene	2.3	ppbv	0.87	0.44	1.74		07/09/10 03:17	71-43-2	
Ethylbenzene	2.6	ppbv	0.87	0.44	1.74		07/09/10 03:17	100-41-4	
Isopropylbenzene (Cumene)	ND	ppbv	0.87	0.44	1.74		07/09/10 03:17	98-82-8	
Methyl-tert-butyl ether	ND	ppbv	0.87	0.44	1.74		07/09/10 03:17	1634-04-4	
Naphthalene	ND	ppbv	0.87	0.44	1.74		07/09/10 03:17	91-20-3	
Toluene	24.4	ppbv	0.87	0.44	1.74		07/09/10 03:17	108-88-3	
m&p-Xylene	9.4	ppbv	1.7	0.87	1.74		07/09/10 03:17	1330-20-7	
o-Xylene	2.5	ppbv	0.87	0.44	1.74		07/09/10 03:17	95-47-6	

ANALYTICAL RESULTS

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Sample: VP-2 **Lab ID: 3029875002** Collected: 06/21/10 13:10 Received: 06/22/10 13:10 Matrix: Air

Comments: • Result confirmed by second analysis.
• The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR Analytical Method: TO-15									
Benzene	ND	ppbv	17.4	8.7	34.8		07/09/10 04:46	71-43-2	
Ethylbenzene	33.9	ppbv	17.4	8.7	34.8		07/09/10 04:46	100-41-4	
Isopropylbenzene (Cumene)	ND	ppbv	17.4	8.7	34.8		07/09/10 04:46	98-82-8	
Methyl-tert-butyl ether	ND	ppbv	17.4	8.7	34.8		07/09/10 04:46	1634-04-4	
Naphthalene	ND	ppbv	17.4	8.7	34.8		07/09/10 04:46	91-20-3	
Toluene	ND	ppbv	17.4	8.7	34.8		07/09/10 04:46	108-88-3	
m&p-Xylene	ND	ppbv	34.8	17.4	34.8		07/09/10 04:46	1330-20-7	
o-Xylene	ND	ppbv	17.4	8.7	34.8		07/09/10 04:46	95-47-6	

ANALYTICAL RESULTS

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Sample: VP-3		Lab ID: 3029875003	Collected: 06/21/10 12:45	Received: 06/22/10 12:40	Matrix: Air				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15							
Benzene	3.1	ppbv	1.5	0.76	3.03		07/09/10 03:48	71-43-2	
Ethylbenzene	ND	ppbv	1.5	0.76	3.03		07/09/10 03:48	100-41-4	
Isopropylbenzene (Cumene)	ND	ppbv	1.5	0.76	3.03		07/09/10 03:48	98-82-8	
Methyl-tert-butyl ether	ND	ppbv	1.5	0.76	3.03		07/09/10 03:48	1634-04-4	
Naphthalene	ND	ppbv	1.5	0.76	3.03		07/09/10 03:48	91-20-3	
Toluene	22.1	ppbv	1.5	0.76	3.03		07/09/10 03:48	108-88-3	
m&p-Xylene	3.8	ppbv	3.0	1.5	3.03		07/09/10 03:48	1330-20-7	
o-Xylene	ND	ppbv	1.5	0.76	3.03		07/09/10 03:48	95-47-6	

ANALYTICAL RESULTS

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

Sample: VP-4		Lab ID: 3029875004		Collected: 06/21/10 13:55		Received: 06/22/10 12:40		Matrix: Air	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15							
Benzene	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	71-43-2	
Ethylbenzene	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	100-41-4	
Isopropylbenzene (Cumene)	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	98-82-8	
Methyl-tert-butyl ether	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	1634-04-4	
Naphthalene	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	91-20-3	
Toluene	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	108-88-3	
m&p-Xylene	ND	ppbv	27.6	13.8	27.6		07/09/10 04:17	1330-20-7	
o-Xylene	ND	ppbv	13.8	6.9	27.6		07/09/10 04:17	95-47-6	

QUALITY CONTROL DATA

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

QC Batch: AIR/10504 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 3029875001, 3029875002, 3029875003, 3029875004

METHOD BLANK: 820404 Matrix: Air
Associated Lab Samples: 3029875001, 3029875002, 3029875003, 3029875004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.50	07/08/10 17:50	
Ethylbenzene	ppbv	ND	0.50	07/08/10 17:50	
Isopropylbenzene (Cumene)	ppbv	ND	0.50	07/08/10 17:50	
m&p-Xylene	ppbv	ND	1.0	07/08/10 17:50	
Methyl-tert-butyl ether	ppbv	ND	0.50	07/08/10 17:50	
Naphthalene	ppbv	ND	0.50	07/08/10 17:50	
o-Xylene	ppbv	ND	0.50	07/08/10 17:50	
Toluene	ppbv	ND	0.50	07/08/10 17:50	

LABORATORY CONTROL SAMPLE: 820405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10	9.3	93	71-125	
Ethylbenzene	ppbv	10	12.2	122	75-150	
Isopropylbenzene (Cumene)	ppbv	10.4	11.5	111	69-142	
m&p-Xylene	ppbv	20	22.8	114	68-138	
Methyl-tert-butyl ether	ppbv	10	9.8	98	75-134	
Naphthalene	ppbv	10	9.1	91	30-150	
o-Xylene	ppbv	10	13.3	133	69-143	
Toluene	ppbv	10	9.4	94	70-128	

QUALIFIERS

Project: 031 Rt. 119 Amoco
Pace Project No.: 3029875

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis



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: 10132039
Project Name: 3029875 Letterle & Associates

Lab Sample No: 3029875001 ProjSampleNum: 3029875001 Date Collected: 06/21/10 13:30
Client Sample ID: VP-1 Matrix: Air Date Received: 06/24/10 9:55

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
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Air

TO-15

Benzene	0.00747	mg/m3	0.0028	1.74	07/09/10 3:17 DB1	71-43-2	
Ethylbenzene	0.0115	mg/m3	0.0038	1.74	07/09/10 3:17 DB1	100-41-4	
Isopropylbenzene (Cumene)	ND	mg/m3	0.0043	1.74	07/09/10 3:17 DB1	98-82-8	
m&p-Xylene	0.0415	mg/m3	0.0075	1.74	07/09/10 3:17 DB1	1330-20-7	
Methyl-tert-butyl ether	ND	mg/m3	0.0032	1.74	07/09/10 3:17 DB1	1634-04-4	
Naphthalene	ND	mg/m3	0.0046	1.74	07/09/10 3:17 DB1	91-20-3	
o-Xylene	0.011	mg/m3	0.0038	1.74	07/09/10 3:17 DB1	95-47-6	
Toluene	0.0935	mg/m3	0.0033	1.74	07/09/10 3:17 DB1	108-88-3	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT

Units Conversion Request



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: 10132039
Project Name: 3029875 Letterle & Associates

Lab Sample No: 3029875002 ProjSampleNum: 3029875002 Date Collected: 06/21/10 14:50
Client Sample ID: VP-2 Matrix: Air Date Received: 06/24/10 9:55

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
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Air

TO-15

Benzene	ND	mg/m3	0.057	34.8	07/09/10 4:46 DB1	71-43-2	
Ethylbenzene	0.15	mg/m3	0.077	34.8	07/09/10 4:46 DB1	100-41-4	
Isopropylbenzene (Cumene)	ND	mg/m3	0.087	34.8	07/09/10 4:46 DB1	98-82-8	
m&p-Xylene	ND	mg/m3	0.15	34.8	07/09/10 4:46 DB1	1330-20-7	
Methyl-tert-butyl ether	ND	mg/m3	0.064	34.8	07/09/10 4:46 DB1	1634-04-4	
Naphthalene	ND	mg/m3	0.093	34.8	07/09/10 4:46 DB1	91-20-3	
o-Xylene	ND	mg/m3	0.077	34.8	07/09/10 4:46 DB1	95-47-6	
Toluene	ND	mg/m3	0.067	34.8	07/09/10 4:46 DB1	108-88-3	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT

Units Conversion Request



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: 10132039
Project Name: 3029875 Letterle & Associates

Lab Sample No: 3029875003
Client Sample ID: VP-3

ProjSampleNum: 3029875003
Matrix: Air

Date Collected: 06/21/10 12:45
Date Received: 06/24/10 9:55

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
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Air

TO-15

Benzene	0.0101	mg/m3	0.0049	3.03	07/09/10 3:48 DB1	71-43-2	
Ethylbenzene	ND	mg/m3	0.0066	3.03	07/09/10 3:48 DB1	100-41-4	
Isopropylbenzene (Cumene)	ND	mg/m3	0.0075	3.03	07/09/10 3:48 DB1	98-82-8	
m&p-Xylene	0.0168	mg/m3	0.013	3.03	07/09/10 3:48 DB1	1330-20-7	
Methyl-tert-butyl ether	ND	mg/m3	0.0055	3.03	07/09/10 3:48 DB1	1634-04-4	
Naphthalene	ND	mg/m3	0.008	3.03	07/09/10 3:48 DB1	91-20-3	
o-Xylene	ND	mg/m3	0.0066	3.03	07/09/10 3:48 DB1	95-47-6	
Toluene	0.0847	mg/m3	0.0057	3.03	07/09/10 3:48 DB1	108-88-3	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT

Units Conversion Request



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: 10132039
Project Name: 3029875 Letterle & Associates

Lab Sample No: 3029875004
Client Sample ID: VP-4

ProjSampleNum: 3029875004
Matrix: Air

Date Collected: 06/21/10 13:55
Date Received: 06/24/10 9:55

Parameters	Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
------------	---------	-------	--------------	----	----------	---------	------------

Air

TO-15

Benzene	ND	mg/m3	0.045	27.6	07/09/10 4:17 DB1	71-43-2	
Ethylbenzene	ND	mg/m3	0.061	27.6	07/09/10 4:17 DB1	100-41-4	
Isopropylbenzene (Cumene)	ND	mg/m3	0.069	27.6	07/09/10 4:17 DB1	98-82-8	
m&p-Xylene	ND	mg/m3	0.12	27.6	07/09/10 4:17 DB1	1330-20-7	
Methyl-tert-butyl ether	ND	mg/m3	0.051	27.6	07/09/10 4:17 DB1	1634-04-4	
Naphthalene	ND	mg/m3	0.073	27.6	07/09/10 4:17 DB1	91-20-3	
o-Xylene	ND	mg/m3	0.061	27.6	07/09/10 4:17 DB1	95-47-6	
Toluene	ND	mg/m3	0.053	27.6	07/09/10 4:17 DB1	108-88-3	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

SUPPLEMENTAL REPORT

Units Conversion Request



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: 10132039
Project Name: 3029875 Letterle & Associates

PARAMETER FOOTNOTES

SUPPLEMENTAL REPORT

Units Conversion Request

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:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Letterle & Associates</u>	Report To: <u>Same</u>	Attention: <u>Same</u>	Company Name: <u>Same</u>	Page: <u>1</u> of <u>1</u>	Invoice Number: <u>1362479</u>
Address: <u>2854 Oxford Blvd Suite 110</u>	Copy To: <u>Same</u>	Company Address: <u>Same</u>	Address: <u>Same</u>	REGULATORY AGENCY	
Email To: <u>Allison Park PA 15101</u>	Purchase Order No.: <u></u>	Pace Quote Reference: <u></u>	Pace Project Manager: <u>Rachel Christof</u>	☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☒ RCRA ☐ OTHER <u>Vapor</u>	
Phone: <u>412-486-0600</u> Fax: <u></u>	Project Name: <u>RT 119 Amoco</u>	Site Location: <u>PA</u>		State: <u>PA</u>	
Requested Due Date/TAT: <u>Standard</u>	Project Number: <u>Q31</u>				

ITEM #	Section D Required Client Information	Section E Matrix Codes	Section F Matrix Code	Section G Sample Type	Section H Matrix Code (see valid codes to left)	Section I Sample Temp at Collection	Section J # of Containers	Section K Preservatives	Section L Analysis Test	Section M Requested Analysis Filtered (Y/N)	Section N Residual Chlorine (Y/N)	Section O Pace Project No./ Lab I.D.
1	VP-1	1364 IL	AR	G	6/21 1330	6-21-10 1530	1 IL	Unpreserved Volume	Analysis Test	Y		001
2	VP-2	1450 IL	VP	V	1310	6-21-10 1040	1 IL		Analysis Test	Y		002
3	VP-3	1175 IL	VP	V	1245	6-22 12:40 221	1 IL		Analysis Test	Y		003
4	VP-4	0019 6L	VP	X	6/21 1355		6L		Analysis Test	Y		004
5												
6												
7												
8												
9												
10												
11												
12												

Section P Additional Comments		Section Q Relinquished By / Affiliation		Section R Accepted By / Affiliation		Section S Sample Conditions	
Units = mg/Lm ³		Tom St John		Tom St John		Temp in °C	
PADED detection limits		6-21-10 1530		6-21-10 1040		Received on	
		6-22 12:40 221		6-22 12:40 221		Sealed Cooler	
						Custody Cooler	
						Samples Intact	



Sample Condition Upon Receipt

Client Name: Letterle

Project # 3029875

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

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☒ yes ☐ no

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used ③

Type of Ice: Wet Blue None

☐ Samples on ice, cooling process has begun

Cooler Temperature 22.1

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: LEL 06/22/10

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: <u>Aw</u>		
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 <u>LEL</u> 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: Amy Wells

Date: 6/22/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

July 12, 2010

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

RE: Project: 031 Route 119 Amoco
Pace Project No.: 3030125

Dear Mr. Letterle:

Enclosed are the analytical results for sample(s) received by the laboratory on June 25, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3030125001	MW-2	Water	06/25/10 11:39	06/25/10 17:35
3030125002	MW-3	Water	06/25/10 10:43	06/25/10 17:35
3030125003	MW-4	Water	06/25/10 11:15	06/25/10 17:35
3030125004	MW-6	Water	06/25/10 10:11	06/25/10 17:35
3030125005	MW-7	Water	06/25/10 11:53	06/25/10 17:35
3030125006	MW-8	Water	06/25/10 12:40	06/25/10 17:35
3030125007	MW-9	Water	06/25/10 12:19	06/25/10 17:35
3030125008	MW-10	Water	06/25/10 13:03	06/25/10 17:35
3030125009	MW-11	Water	06/25/10 13:35	06/25/10 17:35
3030125010	MW-12	Water	06/25/10 14:07	06/25/10 17:35
3030125011	DUPLICATE	Water	06/25/10 09:46	06/25/10 17:35
3030125012	TRIP BLANK	Water	06/25/10 00:00	06/25/10 17:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3030125001	MW-2	EPA 8260	JAS	10	PASI-PA
3030125002	MW-3	EPA 8260	JAS	10	PASI-PA
3030125003	MW-4	EPA 8260	JAS	10	PASI-PA
3030125004	MW-6	EPA 8260	JAS	10	PASI-PA
3030125005	MW-7	EPA 8260	JAS	10	PASI-PA
3030125006	MW-8	EPA 8260	JAS	10	PASI-PA
3030125007	MW-9	EPA 8260	JAS	10	PASI-PA
3030125008	MW-10	EPA 8260	JAS	10	PASI-PA
3030125009	MW-11	EPA 8260	JAS	10	PASI-PA
3030125010	MW-12	EPA 8260	JAS	10	PASI-PA
3030125011	DUPLICATE	EPA 8260	JAS	10	PASI-PA
3030125012	TRIP BLANK	EPA 8260	JAS	10	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-2		Lab ID: 3030125001		Collected: 06/25/10 11:39		Received: 06/25/10 17:35		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	0.16	1		07/02/10 00:29	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 00:29	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 00:29	98-82-8	
Methyl-tert-butyl ether	1.1	ug/L	1.0	0.18	1		07/02/10 00:29	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 00:29	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 00:29	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 00:29	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		07/02/10 00:29	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		07/02/10 00:29	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		07/02/10 00:29	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-3		Lab ID: 3030125002	Collected: 06/25/10 10:43	Received: 06/25/10 17:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	3.0	ug/L	1.0	0.16	1		07/02/10 00:55	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 00:55	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 00:55	98-82-8	
Methyl-tert-butyl ether	43.1	ug/L	1.0	0.18	1		07/02/10 00:55	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 00:55	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 00:55	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 00:55	1330-20-7	
Toluene-d8 (S)	99	%	70-130		1		07/02/10 00:55	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130		1		07/02/10 00:55	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		07/02/10 00:55	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-4		Lab ID: 3030125003		Collected: 06/25/10 11:15		Received: 06/25/10 17:35		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	0.16	1		07/02/10 01:21	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 01:21	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 01:21	98-82-8	
Methyl-tert-butyl ether	4.5	ug/L	1.0	0.18	1		07/02/10 01:21	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 01:21	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 01:21	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 01:21	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		07/02/10 01:21	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		07/02/10 01:21	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		07/02/10 01:21	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-6		Lab ID: 3030125004		Collected: 06/25/10 10:11		Received: 06/25/10 17:35		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	0.16	1		07/02/10 01:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 01:47	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 01:47	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.18	1		07/02/10 01:47	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 01:47	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 01:47	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 01:47	1330-20-7	
Toluene-d8 (S)	98 %		70-130		1		07/02/10 01:47	2037-26-5	
4-Bromofluorobenzene (S)	103 %		70-130		1		07/02/10 01:47	460-00-4	
1,2-Dichloroethane-d4 (S)	105 %		70-130		1		07/02/10 01:47	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

Sample: MW-7		Lab ID: 3030125005	Collected: 06/25/10 11:53	Received: 06/25/10 17:35	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	0.16	1		07/02/10 02:13	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 02:13	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 02:13	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.18	1		07/02/10 02:13	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 02:13	91-20-3	
Toluene	1.6	ug/L	1.0	0.50	1		07/02/10 02:13	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 02:13	1330-20-7	
Toluene-d8 (S)	96	%	70-130		1		07/02/10 02:13	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		07/02/10 02:13	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		07/02/10 02:13	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-8		Lab ID: 3030125006		Collected: 06/25/10 12:40		Received: 06/25/10 17:35		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	0.16	1		07/02/10 02:39	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 02:39	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 02:39	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.18	1		07/02/10 02:39	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 02:39	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 02:39	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 02:39	1330-20-7	
Toluene-d8 (S)	100 %		70-130		1		07/02/10 02:39	2037-26-5	
4-Bromofluorobenzene (S)	102 %		70-130		1		07/02/10 02:39	460-00-4	
1,2-Dichloroethane-d4 (S)	104 %		70-130		1		07/02/10 02:39	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-9		Lab ID: 3030125007		Collected: 06/25/10 12:19		Received: 06/25/10 17:35		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	0.16	1		07/02/10 03:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 03:06	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 03:06	98-82-8	
Methyl-tert-butyl ether	7.5	ug/L	1.0	0.18	1		07/02/10 03:06	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.26	1		07/02/10 03:06	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 03:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 03:06	1330-20-7	
Toluene-d8 (S)	99	%	70-130		1		07/02/10 03:06	2037-26-5	
4-Bromofluorobenzene (S)	106	%	70-130		1		07/02/10 03:06	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		07/02/10 03:06	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-10		Lab ID: 3030125008		Collected: 06/25/10 13:03		Received: 06/25/10 17:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	1.5 ug/L		1.0	0.16	1		07/02/10 03:32	71-43-2	
Ethylbenzene	ND ug/L		1.0	0.14	1		07/02/10 03:32	100-41-4	
Isopropylbenzene (Cumene)	ND ug/L		1.0	0.18	1		07/02/10 03:32	98-82-8	
Methyl-tert-butyl ether	29.4 ug/L		1.0	0.18	1		07/02/10 03:32	1634-04-4	
Naphthalene	ND ug/L		2.0	0.26	1		07/02/10 03:32	91-20-3	
Toluene	3.0 ug/L		1.0	0.50	1		07/02/10 03:32	108-88-3	
Xylene (Total)	ND ug/L		3.0	3.0	1		07/02/10 03:32	1330-20-7	
Toluene-d8 (S)	97 %		70-130		1		07/02/10 03:32	2037-26-5	
4-Bromofluorobenzene (S)	100 %		70-130		1		07/02/10 03:32	460-00-4	
1,2-Dichloroethane-d4 (S)	104 %		70-130		1		07/02/10 03:32	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-11		Lab ID: 3030125009		Collected: 06/25/10 13:35		Received: 06/25/10 17:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	310	ug/L	1.0	0.16	1		07/02/10 03:58	71-43-2	
Ethylbenzene	140	ug/L	1.0	0.14	1		07/02/10 03:58	100-41-4	
Isopropylbenzene (Cumene)	17.3	ug/L	1.0	0.18	1		07/02/10 03:58	98-82-8	
Methyl-tert-butyl ether	168	ug/L	1.0	0.18	1		07/02/10 03:58	1634-04-4	
Naphthalene	21.6	ug/L	2.0	0.26	1		07/02/10 03:58	91-20-3	
Toluene	16.0	ug/L	1.0	0.50	1		07/02/10 03:58	108-88-3	
Xylene (Total)	93.7	ug/L	3.0	3.0	1		07/02/10 03:58	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		07/02/10 03:58	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		07/02/10 03:58	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		07/02/10 03:58	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: MW-12		Lab ID: 3030125010		Collected: 06/25/10 14:07		Received: 06/25/10 17:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	5.0 ug/L		1.0	0.16	1		07/02/10 04:50	71-43-2	
Ethylbenzene	ND ug/L		1.0	0.14	1		07/02/10 04:50	100-41-4	
Isopropylbenzene (Cumene)	ND ug/L		1.0	0.18	1		07/02/10 04:50	98-82-8	
Methyl-tert-butyl ether	159 ug/L		1.0	0.18	1		07/02/10 04:50	1634-04-4	
Naphthalene	ND ug/L		2.0	0.26	1		07/02/10 04:50	91-20-3	
Toluene	ND ug/L		1.0	0.50	1		07/02/10 04:50	108-88-3	
Xylene (Total)	ND ug/L		3.0	3.0	1		07/02/10 04:50	1330-20-7	
Toluene-d8 (S)	95 %		70-130		1		07/02/10 04:50	2037-26-5	
4-Bromofluorobenzene (S)	101 %		70-130		1		07/02/10 04:50	460-00-4	
1,2-Dichloroethane-d4 (S)	104 %		70-130		1		07/02/10 04:50	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3030125

Sample: DUPLICATE		Lab ID: 3030125011	Collected: 06/25/10 09:46	Received: 06/25/10 17:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	302	ug/L	1.0	0.16	1		07/02/10 05:16	71-43-2	
Ethylbenzene	138	ug/L	1.0	0.14	1		07/02/10 05:16	100-41-4	
Isopropylbenzene (Cumene)	17.0	ug/L	1.0	0.18	1		07/02/10 05:16	98-82-8	
Methyl-tert-butyl ether	166	ug/L	1.0	0.18	1		07/02/10 05:16	1634-04-4	
Naphthalene	33.9	ug/L	2.0	0.26	1		07/02/10 05:16	91-20-3	
Toluene	16.4	ug/L	1.0	0.50	1		07/02/10 05:16	108-88-3	
Xylene (Total)	90.2	ug/L	3.0	3.0	1		07/02/10 05:16	1330-20-7	
Toluene-d8 (S)	99	%	70-130		1		07/02/10 05:16	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		07/02/10 05:16	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		07/02/10 05:16	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

Sample: TRIP BLANK		Lab ID: 3030125012		Collected: 06/25/10 00:00		Received: 06/25/10 17:35		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	0.16	1		07/02/10 06:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.14	1		07/02/10 06:09	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.18	1		07/02/10 06:09	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.18	1		07/02/10 06:09	1634-04-4	
Naphthalene	2.1	ug/L	2.0	0.26	1		07/02/10 06:09	91-20-3	
Toluene	ND	ug/L	1.0	0.50	1		07/02/10 06:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		07/02/10 06:09	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		07/02/10 06:09	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		07/02/10 06:09	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		07/02/10 06:09	17060-07-0	

QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

QC Batch: MSV/6412 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3030125001, 3030125002, 3030125003, 3030125004, 3030125005, 3030125006, 3030125007, 3030125008, 3030125009, 3030125010, 3030125011, 3030125012

METHOD BLANK: 189768 Matrix: Water
Associated Lab Samples: 3030125001, 3030125002, 3030125003, 3030125004, 3030125005, 3030125006, 3030125007, 3030125008, 3030125009, 3030125010, 3030125011, 3030125012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/01/10 21:52	
Ethylbenzene	ug/L	ND	1.0	07/01/10 21:52	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	07/01/10 21:52	
Methyl-tert-butyl ether	ug/L	ND	1.0	07/01/10 21:52	
Naphthalene	ug/L	ND	2.0	07/01/10 21:52	
Toluene	ug/L	ND	1.0	07/01/10 21:52	
Xylene (Total)	ug/L	ND	3.0	07/01/10 21:52	
1,2-Dichloroethane-d4 (S)	%	101	70-130	07/01/10 21:52	
4-Bromofluorobenzene (S)	%	101	70-130	07/01/10 21:52	
Toluene-d8 (S)	%	94	70-130	07/01/10 21:52	

LABORATORY CONTROL SAMPLE: 189769

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.8	94	70-130	
Ethylbenzene	ug/L	20	20.4	102	70-130	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	70-130	
Methyl-tert-butyl ether	ug/L	20	22.4	112	70-130	
Naphthalene	ug/L	20	19.3	97	70-130	
Toluene	ug/L	20	20.2	101	70-130	
Xylene (Total)	ug/L	60	61.9	103	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 189770 189771

Parameter	Units	3030125001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Benzene	ug/L	ND	20	20	20.8	22.8	104	114	70-130	9	30
Ethylbenzene	ug/L	ND	20	20	22.1	24.1	111	121	70-130	9	30
Isopropylbenzene (Cumene)	ug/L	ND	20	20	20.8	23.6	104	118	70-130	12	30
Methyl-tert-butyl ether	ug/L	1.1	20	20	23.7	26.8	113	129	70-130	13	30
Naphthalene	ug/L	ND	20	20	36.5	23.2	179	113	70-130	45	30 M0, R1
Toluene	ug/L	ND	20	20	20.7	23.9	104	119	70-130	14	30
Xylene (Total)	ug/L	ND	60	60	68.9	71.5	115	119	70-130	4	30
1,2-Dichloroethane-d4 (S)	%						102	98	70-130		
4-Bromofluorobenzene (S)	%						100	99	70-130		

Date: 07/12/2010 03:01 PM

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 189770 189771											
Parameter	Units	3030125001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Toluene-d8 (S)	%						96	97	70-130		

QUALIFIERS

Project: 031 Route 119 Amoco
Pace Project No.: 3030125

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
R1 RPD value was outside control limits.

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

Section A Requested Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Letterle & Associates	Report To:	Nate Croasmun	Attention:	Tracey Jennewine
Address:	2859 Oxford Boulevard, Suite 110 Allison Park, PA 15101	Copy To:	Eric Iltle	Company Name:	Letterle & Associates
Email To:		Purchase Order No.:		Address:	
Phone:	412-486-0600	Project Name:	Route 119 Amoco	Pace Quote Reference:	
	Fax:	Project Number:	031	Pace Project Manager:	Rachel Christner
Requested Due Date/TAT:	Standard	Requested Due Date/TAT:	Standard	Pace Profile #:	520

Page: 1 of 1

REGULATORY AGENCY			
☐ NPDES	☐ GROUND WATER	☐ DRINKING WATER	
☒ UST	☐ RCRA	☐ OTHER	
Site Location		PA	
STATE:			

Section D Required Client Information		Valid Matrix Codes		COLLECTED		SAMPLE TEMP AT COLLECTION		PRESERVATIVES		Requested Analysis Filtered (Y/N)		Pace Project No. / Lab I.D.	
ITEM #	SAMPLE ID (A-Z, 0-9, /, -) Sample IDs MUST BE UNIQUE	MATRIX	CODE	DATE	TIME	COMPOSITE START	COMPOSITE END/GAR	# OF CONTAINERS	Preservatives		Y/N	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
									H ₂ SO ₄	HNO ₃			
1	MW-2	WT		6/25/10	1139			3	Unpreserved				001
2	MW-3	WT		6/25/10	1043			3					002
3	MW-4	WT		6/25/10	1115			3					003
4	MW-6	WT		6/25/10	1011			3					004
5	MW-7	WT		6/25/10	1153			3					005
6	MW-8	WT		6/25/10	1240			3					006
7	MW-9	WT		6/25/10	1219			3					007
8	MW-10	WT		6/25/10	1303			3					008
9	MW-11	WT		6/25/10	1335			3					009
10	MW-12	WT		6/25/10	1407			3					010
11	Duplicate (MW-10)	WT		6/25/10	0946			3					011
12	Trip Blank	WT		6/25/10				2					012

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

ADDITIONAL COMMENTS

PAPER detection limits

RELINQUISHED BY / AFFILIATION

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ADDITIONAL COMMENTS

PAPER detection limits

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PAPER detection limits

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ADDITIONAL COMMENTS

PAPER detection limits

Important Note: By signing this form you are accepting Paco's NET 30 day payment terms and agreeing to hold company of 4.44% per month. Company of 4.44% per month is not subject to change.

SIGNATURE OF SAMPLER: Tom F. Smith



Sample Condition Upon Receipt

LEL

Client Name: Letterle

Project # 3030125

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

Tracking #: _____

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 1.6

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: SMB 6/25/10

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: <u>Au</u>		
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: <u>VOA</u> coliform, TOC, O&G, Wt-DRO (water)	☒ Yes ☐ No	Initial when completed <u>SMB</u> 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: Garner D. Chastner

Date: 6/28/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

September 10, 2010

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

RE: Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Dear Mr. Letterle:

Enclosed are the analytical results for sample(s) received by the laboratory on August 30, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Rachel Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3033151001	MW-2	Water	08/27/10 12:05	08/30/10 13:00
3033151002	MW-3	Water	08/27/10 10:50	08/30/10 13:00
3033151003	MW-4	Water	08/27/10 10:25	08/30/10 13:00
3033151004	MW-6	Water	08/27/10 10:05	08/30/10 13:00
3033151005	MW-7	Water	08/27/10 12:25	08/30/10 13:00
3033151006	MW-8	Water	08/27/10 11:40	08/30/10 13:00
3033151007	MW-9	Water	08/27/10 11:15	08/30/10 13:00
3033151008	MW-10	Water	08/27/10 12:45	08/30/10 13:00
3033151009	MW-11	Water	08/27/10 13:40	08/30/10 13:00
3033151010	MW-12	Water	08/27/10 13:15	08/30/10 13:00
3033151011	DUP	Water	08/27/10 09:45	08/30/10 13:00
3033151012	TRIP BLANK	Water	08/27/10 00:01	08/30/10 13:00

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SAMPLE ANALYTE COUNT

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3033151001	MW-2	EPA 8260	EAC	10	PASI-PA
3033151002	MW-3	EPA 8260	EAC	10	PASI-PA
3033151003	MW-4	EPA 8260	EAC	10	PASI-PA
3033151004	MW-6	EPA 8260	EAC	10	PASI-PA
3033151005	MW-7	EPA 8260	EAC	10	PASI-PA
3033151006	MW-8	EPA 8260	EAC	10	PASI-PA
3033151007	MW-9	EPA 8260	EAC	10	PASI-PA
3033151008	MW-10	EPA 8260	EAC	10	PASI-PA
3033151009	MW-11	EPA 8260	EAC	10	PASI-PA
3033151010	MW-12	EPA 8260	EAC	10	PASI-PA
3033151011	DUP	EPA 8260	EAC	10	PASI-PA
3033151012	TRIP BLANK	EPA 8260	EAC	10	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: MW-2		Lab ID: 3033151001	Collected: 08/27/10 12:05		Received: 08/30/10 13:00		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	0.50	1		09/01/10 23:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/01/10 23:06	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/01/10 23:06	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.20	1		09/01/10 23:06	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/01/10 23:06	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/01/10 23:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/01/10 23:06	1330-20-7	
Toluene-d8 (S)	90	%	70-130		1		09/01/10 23:06	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		09/01/10 23:06	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130		1		09/01/10 23:06	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: MW-3		Lab ID: 3033151002		Collected: 08/27/10 10:50		Received: 08/30/10 13:00		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	0.50	1		09/01/10 23:31	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/01/10 23:31	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/01/10 23:31	98-82-8	
Methyl-tert-butyl ether	50.9	ug/L	1.0	0.20	1		09/01/10 23:31	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/01/10 23:31	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/01/10 23:31	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/01/10 23:31	1330-20-7	
Toluene-d8 (S)	92	%	70-130		1		09/01/10 23:31	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		09/01/10 23:31	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/01/10 23:31	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco

Pace Project No.: 3033151

Sample: MW-4		Lab ID: 3033151003		Collected: 08/27/10 10:25		Received: 08/30/10 13:00		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	0.50	1		09/01/10 23:55	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/01/10 23:55	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/01/10 23:55	98-82-8	
Methyl-tert-butyl ether	3.7	ug/L	1.0	0.20	1		09/01/10 23:55	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/01/10 23:55	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/01/10 23:55	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/01/10 23:55	1330-20-7	
Toluene-d8 (S)	92	%	70-130		1		09/01/10 23:55	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		09/01/10 23:55	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130		1		09/01/10 23:55	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco

Pace Project No.: 3033151

Sample: MW-6		Lab ID: 3033151004		Collected: 08/27/10 10:05		Received: 08/30/10 13:00		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	0.50	1		09/02/10 00:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/02/10 00:20	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/02/10 00:20	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.20	1		09/02/10 00:20	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/02/10 00:20	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/02/10 00:20	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/02/10 00:20	1330-20-7	
Toluene-d8 (S)	92	%	70-130		1		09/02/10 00:20	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130		1		09/02/10 00:20	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130		1		09/02/10 00:20	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: MW-7		Lab ID: 3033151005		Collected: 08/27/10 12:25		Received: 08/30/10 13:00		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	0.50	1		09/02/10 00:44	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/02/10 00:44	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/02/10 00:44	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.20	1		09/02/10 00:44	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/02/10 00:44	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/02/10 00:44	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/02/10 00:44	1330-20-7	
Toluene-d8 (S)	92 %		70-130		1		09/02/10 00:44	2037-26-5	
4-Bromofluorobenzene (S)	97 %		70-130		1		09/02/10 00:44	460-00-4	
1,2-Dichloroethane-d4 (S)	120 %		70-130		1		09/02/10 00:44	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco

Pace Project No.: 3033151

Sample: MW-8		Lab ID: 3033151006		Collected: 08/27/10 11:40		Received: 08/30/10 13:00		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	0.50	1		09/02/10 01:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/02/10 01:08	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/02/10 01:08	98-82-8	
Methyl-tert-butyl ether	1.7	ug/L	1.0	0.20	1		09/02/10 01:08	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/02/10 01:08	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/02/10 01:08	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/02/10 01:08	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		09/02/10 01:08	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		09/02/10 01:08	460-00-4	
1,2-Dichloroethane-d4 (S)	121	%	70-130		1		09/02/10 01:08	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco

Pace Project No.: 3033151

Sample: MW-9		Lab ID: 3033151007		Collected: 08/27/10 11:15		Received: 08/30/10 13:00		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	0.50	1		09/02/10 01:33	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/02/10 01:33	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/02/10 01:33	98-82-8	
Methyl-tert-butyl ether	3.7	ug/L	1.0	0.20	1		09/02/10 01:33	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/02/10 01:33	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/02/10 01:33	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/02/10 01:33	1330-20-7	
Toluene-d8 (S)	90	%	70-130		1		09/02/10 01:33	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		09/02/10 01:33	460-00-4	
1,2-Dichloroethane-d4 (S)	123	%	70-130		1		09/02/10 01:33	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: MW-10		Lab ID: 3033151008		Collected: 08/27/10 12:45		Received: 08/30/10 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	1.8	ug/L	1.0	0.50	1		09/02/10 01:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/02/10 01:57	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/02/10 01:57	98-82-8	
Methyl-tert-butyl ether	12.8	ug/L	1.0	0.20	1		09/02/10 01:57	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/02/10 01:57	91-20-3	
Toluene	4.9	ug/L	1.0	0.14	1		09/02/10 01:57	108-88-3	
Xylene (Total)	3.8	ug/L	3.0	3.0	1		09/02/10 01:57	1330-20-7	
Toluene-d8 (S)	94	%	70-130		1		09/02/10 01:57	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		09/02/10 01:57	460-00-4	
1,2-Dichloroethane-d4 (S)	122	%	70-130		1		09/02/10 01:57	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: MW-11		Lab ID: 3033151009		Collected: 08/27/10 13:40		Received: 08/30/10 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	611	ug/L	20.0	10.0	20		09/02/10 12:27	71-43-2	
Ethylbenzene	249	ug/L	1.0	0.50	1		09/02/10 02:22	100-41-4	
Isopropylbenzene (Cumene)	28.7	ug/L	1.0	0.50	1		09/02/10 02:22	98-82-8	
Methyl-tert-butyl ether	270	ug/L	1.0	0.20	1		09/02/10 02:22	1634-04-4	
Naphthalene	72.7	ug/L	2.0	1.3	1		09/02/10 02:22	91-20-3	
Toluene	28.8	ug/L	1.0	0.14	1		09/02/10 02:22	108-88-3	
Xylene (Total)	178	ug/L	3.0	3.0	1		09/02/10 02:22	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		09/02/10 02:22	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		09/02/10 02:22	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		09/02/10 02:22	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: MW-12		Lab ID: 3033151010		Collected: 08/27/10 13:15		Received: 08/30/10 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	39.7	ug/L	1.0	0.50	1		09/02/10 02:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/02/10 02:46	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/02/10 02:46	98-82-8	
Methyl-tert-butyl ether	361	ug/L	1.0	0.20	1		09/02/10 02:46	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/02/10 02:46	91-20-3	
Toluene	1.2	ug/L	1.0	0.14	1		09/02/10 02:46	108-88-3	
Xylene (Total)	3.8	ug/L	3.0	3.0	1		09/02/10 02:46	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		09/02/10 02:46	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130		1		09/02/10 02:46	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1		09/02/10 02:46	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: DUP		Lab ID: 3033151011		Collected: 08/27/10 09:45		Received: 08/30/10 13:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	564	ug/L	20.0	10.0	20		09/02/10 12:52	71-43-2	
Ethylbenzene	230	ug/L	1.0	0.50	1		09/02/10 03:10	100-41-4	
Isopropylbenzene (Cumene)	26.7	ug/L	1.0	0.50	1		09/02/10 03:10	98-82-8	
Methyl-tert-butyl ether	260	ug/L	1.0	0.20	1		09/02/10 03:10	1634-04-4	
Naphthalene	68.6	ug/L	2.0	1.3	1		09/02/10 03:10	91-20-3	
Toluene	26.9	ug/L	1.0	0.14	1		09/02/10 03:10	108-88-3	
Xylene (Total)	166	ug/L	3.0	3.0	1		09/02/10 03:10	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		09/02/10 03:10	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		09/02/10 03:10	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1		09/02/10 03:10	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

Sample: TRIP BLANK		Lab ID: 3033151012		Collected: 08/27/10 00:01		Received: 08/30/10 13:00		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	0.50	1		09/01/10 22:42	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.50	1		09/01/10 22:42	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.50	1		09/01/10 22:42	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.20	1		09/01/10 22:42	1634-04-4	
Naphthalene	ND	ug/L	2.0	1.3	1		09/01/10 22:42	91-20-3	
Toluene	ND	ug/L	1.0	0.14	1		09/01/10 22:42	108-88-3	
Xylene (Total)	ND	ug/L	3.0	3.0	1		09/01/10 22:42	1330-20-7	
Toluene-d8 (S)	92	%	70-130		1		09/01/10 22:42	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		09/01/10 22:42	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/01/10 22:42	17060-07-0	

QUALITY CONTROL DATA

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

QC Batch: MSV/6994 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3033151001, 3033151002, 3033151003, 3033151004, 3033151005, 3033151006, 3033151007, 3033151008, 3033151009, 3033151010, 3033151011, 3033151012

METHOD BLANK: 210095 Matrix: Water
Associated Lab Samples: 3033151001, 3033151002, 3033151003, 3033151004, 3033151005, 3033151006, 3033151007, 3033151008, 3033151009, 3033151010, 3033151011, 3033151012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/01/10 22:17	
Ethylbenzene	ug/L	ND	1.0	09/01/10 22:17	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	09/01/10 22:17	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/01/10 22:17	
Naphthalene	ug/L	ND	2.0	09/01/10 22:17	
Toluene	ug/L	ND	1.0	09/01/10 22:17	
Xylene (Total)	ug/L	ND	3.0	09/01/10 22:17	
1,2-Dichloroethane-d4 (S)	%	115	70-130	09/01/10 22:17	
4-Bromofluorobenzene (S)	%	99	70-130	09/01/10 22:17	
Toluene-d8 (S)	%	92	70-130	09/01/10 22:17	

LABORATORY CONTROL SAMPLE: 210096

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.5	88	70-130	
Ethylbenzene	ug/L	20	18.2	91	70-130	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	70-130	
Methyl-tert-butyl ether	ug/L	20	22.4	112	70-130	
Naphthalene	ug/L	20	18.5	92	70-130	
Toluene	ug/L	20	18.1	90	70-130	
Xylene (Total)	ug/L	60	52.6	88	70-130	
1,2-Dichloroethane-d4 (S)	%			111	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 210366 210367

Parameter	Units	3033151004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Benzene	ug/L	ND	20	20	20.4	20.5	102	102	70-130	.3	30
Ethylbenzene	ug/L	ND	20	20	20.3	20.5	101	103	70-130	1	30
Isopropylbenzene (Cumene)	ug/L	ND	20	20	20.9	21.9	105	110	70-130	5	30
Methyl-tert-butyl ether	ug/L	ND	20	20	25.7	19.7	129	98	70-130	26	30
Naphthalene	ug/L	ND	20	20	18.1	18.1	90	91	70-130	.3	30
Toluene	ug/L	ND	20	20	21.0	21.1	105	105	70-130	.4	30
Xylene (Total)	ug/L	ND	60	60	59.2	61.2	99	102	70-130	3	30
1,2-Dichloroethane-d4 (S)	%						106	104	70-130		
4-Bromofluorobenzene (S)	%						102	102	70-130		

Date: 09/10/2010 05:59 PM

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 031 Rt 119 Amoco
Pace Project No.: 3033151

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:			210366		210367									
Parameter	Units	3033151004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual			
Toluene-d8 (S)	%						92	93	70-130					

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[illegible]

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

January 05, 2011

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

RE: Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Dear Mr. Letterle:

Enclosed are the analytical results for sample(s) received by the laboratory on December 21, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



David A. Pichette for
Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

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.: 3039007

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3039007001	MW-3	Water	12/20/10 13:50	12/21/10 13:30
3039007002	MW-4	Water	12/20/10 14:20	12/21/10 13:30
3039007003	MW-6	Water	12/20/10 14:55	12/21/10 13:30
3039007004	MW-7	Water	12/20/10 12:10	12/21/10 13:30
3039007005	MW-8	Water	12/20/10 12:30	12/21/10 13:30
3039007006	MW-10	Water	12/20/10 12:45	12/21/10 13:30
3039007007	MW-11	Water	12/20/10 13:15	12/21/10 13:30
3039007008	MW-12	Water	12/20/10 11:50	12/21/10 13:30
3039007009	Duplicate (MW-11)	Water	12/20/10 13:15	12/21/10 13:30
3039007010	Trip Blank	Water		12/21/10 13:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3039007001	MW-3	EPA 8260	EAC	10	PASI-PA
3039007002	MW-4	EPA 8260	EAC	10	PASI-PA
3039007003	MW-6	EPA 8260	EAC	10	PASI-PA
3039007004	MW-7	EPA 8260	EAC	10	PASI-PA
3039007005	MW-8	EPA 8260	EAC	10	PASI-PA
3039007006	MW-10	EPA 8260	EAC	10	PASI-PA
3039007007	MW-11	EPA 8260	EAC	10	PASI-PA
3039007008	MW-12	EPA 8260	EAC	10	PASI-PA
3039007009	Duplicate (MW-11)	EPA 8260	EAC	10	PASI-PA
3039007010	Trip Blank	EPA 8260	EAC	10	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-3		Lab ID: 3039007001		Collected: 12/20/10 13:50		Received: 12/21/10 13:30		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	0.13	1		12/28/10 15:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 15:40	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 15:40	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		12/28/10 15:40	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.52	1		12/28/10 15:40	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 15:40	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 15:40	1330-20-7	
Toluene-d8 (S)	107	%	70-130		1		12/28/10 15:40	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		12/28/10 15:40	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		12/28/10 15:40	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-4		Lab ID: 3039007002		Collected: 12/20/10 14:20		Received: 12/21/10 13:30		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	0.13	1		12/28/10 16:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 16:06	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 16:06	98-82-8	
Methyl-tert-butyl ether	3.2	ug/L	1.0	0.16	1		12/28/10 16:06	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.52	1		12/28/10 16:06	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 16:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 16:06	1330-20-7	
Toluene-d8 (S)	109	%	70-130		1		12/28/10 16:06	2037-26-5	
4-Bromofluorobenzene (S)	109	%	70-130		1		12/28/10 16:06	460-00-4	
1,2-Dichloroethane-d4 (S)	88	%	70-130		1		12/28/10 16:06	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-6		Lab ID: 3039007003	Collected: 12/20/10 14:55		Received: 12/21/10 13:30		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	0.13	1		12/28/10 16:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 16:32	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 16:32	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		12/28/10 16:32	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.52	1		12/28/10 16:32	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 16:32	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 16:32	1330-20-7	
Toluene-d8 (S)	110	%	70-130		1		12/28/10 16:32	2037-26-5	
4-Bromofluorobenzene (S)	108	%	70-130		1		12/28/10 16:32	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	70-130		1		12/28/10 16:32	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco

Pace Project No.: 3039007

Sample: MW-7		Lab ID: 3039007004		Collected: 12/20/10 12:10		Received: 12/21/10 13:30		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	0.13	1		12/28/10 16:59	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 16:59	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 16:59	98-82-8	
Methyl-tert-butyl ether	5.0	ug/L	1.0	0.16	1		12/28/10 16:59	1634-04-4	
Naphthalene	2.3	ug/L	2.0	0.52	1		12/28/10 16:59	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 16:59	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 16:59	1330-20-7	
Toluene-d8 (S)	111	%	70-130		1		12/28/10 16:59	2037-26-5	
4-Bromofluorobenzene (S)	111	%	70-130		1		12/28/10 16:59	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	70-130		1		12/28/10 16:59	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-8		Lab ID: 3039007005		Collected: 12/20/10 12:30		Received: 12/21/10 13:30		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	0.13	1		12/28/10 17:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 17:25	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 17:25	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		12/28/10 17:25	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.52	1		12/28/10 17:25	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 17:25	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 17:25	1330-20-7	
Toluene-d8 (S)	112	%	70-130		1		12/28/10 17:25	2037-26-5	
4-Bromofluorobenzene (S)	107	%	70-130		1		12/28/10 17:25	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		12/28/10 17:25	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-10		Lab ID: 3039007006	Collected: 12/20/10 12:45	Received: 12/21/10 13:30	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	0.13	1		12/28/10 17:51	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 17:51	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 17:51	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		12/28/10 17:51	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.52	1		12/28/10 17:51	91-20-3	
Toluene	1.2	ug/L	1.0	1.0	1		12/28/10 17:51	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 17:51	1330-20-7	
Toluene-d8 (S)	106	%	70-130		1		12/28/10 17:51	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130		1		12/28/10 17:51	460-00-4	
1,2-Dichloroethane-d4 (S)	86	%	70-130		1		12/28/10 17:51	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-11		Lab ID: 3039007007		Collected: 12/20/10 13:15		Received: 12/21/10 13:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	764	ug/L	20.0	2.6	20		12/28/10 18:43	71-43-2	
Ethylbenzene	304	ug/L	1.0	0.27	1		12/28/10 18:17	100-41-4	
Isopropylbenzene (Cumene)	37.5	ug/L	1.0	1.0	1		12/28/10 18:17	98-82-8	
Methyl-tert-butyl ether	236	ug/L	1.0	0.16	1		12/28/10 18:17	1634-04-4	
Naphthalene	91.5	ug/L	2.0	0.52	1		12/28/10 18:17	91-20-3	
Toluene	38.7	ug/L	1.0	1.0	1		12/28/10 18:17	108-88-3	
Xylene (Total)	153	ug/L	3.0	0.53	1		12/28/10 18:17	1330-20-7	
Toluene-d8 (S)	119	%	70-130		1		12/28/10 18:17	2037-26-5	
4-Bromofluorobenzene (S)	114	%	70-130		1		12/28/10 18:17	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130		1		12/28/10 18:17	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: MW-12		Lab ID: 3039007008	Collected: 12/20/10 11:50		Received: 12/21/10 13:30		Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	14.6	ug/L	1.0	0.13	1		12/28/10 19:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 19:09	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 19:09	98-82-8	
Methyl-tert-butyl ether	181	ug/L	1.0	0.16	1		12/28/10 19:09	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.52	1		12/28/10 19:09	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 19:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 19:09	1330-20-7	
Toluene-d8 (S)	112	%	70-130		1		12/28/10 19:09	2037-26-5	
4-Bromofluorobenzene (S)	110	%	70-130		1		12/28/10 19:09	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130		1		12/28/10 19:09	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: Duplicate (MW-11)		Lab ID: 3039007009	Collected: 12/20/10 13:15		Received: 12/21/10 13:30		Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	764	ug/L	20.0	2.6	20		12/28/10 20:01	71-43-2	
Ethylbenzene	303	ug/L	1.0	0.27	1		12/28/10 19:35	100-41-4	
Isopropylbenzene (Cumene)	37.7	ug/L	1.0	1.0	1		12/28/10 19:35	98-82-8	
Methyl-tert-butyl ether	231	ug/L	1.0	0.16	1		12/28/10 19:35	1634-04-4	
Naphthalene	88.6	ug/L	2.0	0.52	1		12/28/10 19:35	91-20-3	
Toluene	38.9	ug/L	1.0	1.0	1		12/28/10 19:35	108-88-3	
Xylene (Total)	156	ug/L	3.0	0.53	1		12/28/10 19:35	1330-20-7	
Toluene-d8 (S)	118	%	70-130		1		12/28/10 19:35	2037-26-5	
4-Bromofluorobenzene (S)	113	%	70-130		1		12/28/10 19:35	460-00-4	
1,2-Dichloroethane-d4 (S)	88	%	70-130		1		12/28/10 19:35	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

Sample: Trip Blank		Lab ID: 3039007010		Collected:		Received: 12/21/10 13:30		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	0.13	1		12/28/10 20:27	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.27	1		12/28/10 20:27	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1.0	1		12/28/10 20:27	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.16	1		12/28/10 20:27	1634-04-4	
Naphthalene	5.9	ug/L	2.0	0.52	1		12/28/10 20:27	91-20-3	
Toluene	ND	ug/L	1.0	1.0	1		12/28/10 20:27	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.53	1		12/28/10 20:27	1330-20-7	
Toluene-d8 (S)	111	%	70-130		1		12/28/10 20:27	2037-26-5	
4-Bromofluorobenzene (S)	111	%	70-130		1		12/28/10 20:27	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	70-130		1		12/28/10 20:27	17060-07-0	

QUALITY CONTROL DATA

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

QC Batch: MSV/8133 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3039007001, 3039007002, 3039007003, 3039007004, 3039007005, 3039007006, 3039007007, 3039007008, 3039007009, 3039007010

METHOD BLANK: 253351 Matrix: Water

Associated Lab Samples: 3039007001, 3039007002, 3039007003, 3039007004, 3039007005, 3039007006, 3039007007, 3039007008, 3039007009, 3039007010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/28/10 12:04	
Ethylbenzene	ug/L	ND	1.0	12/28/10 12:04	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/28/10 12:04	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/28/10 12:04	
Naphthalene	ug/L	ND	2.0	12/28/10 12:04	
Toluene	ug/L	ND	1.0	12/28/10 12:04	
Xylene (Total)	ug/L	ND	3.0	12/28/10 12:04	
1,2-Dichloroethane-d4 (S)	%	90	70-130	12/28/10 12:04	
4-Bromofluorobenzene (S)	%	108	70-130	12/28/10 12:04	
Toluene-d8 (S)	%	112	70-130	12/28/10 12:04	

LABORATORY CONTROL SAMPLE: 253352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.7	88	70-130	
Ethylbenzene	ug/L	20	18.7	94	70-130	
Isopropylbenzene (Cumene)	ug/L	20	25.1	126	70-130	
Methyl-tert-butyl ether	ug/L	20	17.9	90	70-130	
Naphthalene	ug/L	20	24.4	122	70-130	
Toluene	ug/L	20	17.9	90	70-130	
Xylene (Total)	ug/L	60	55.7	93	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			113	70-130	
Toluene-d8 (S)	%			93	70-130	

QUALIFIERS

Project: 031 Route 119 Amoco
Pace Project No.: 3039007

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

BATCH QUALIFIERS

Batch: MSV/8133

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Letterle & Associates	Report To:	Nate Croasmun	Attention:	Tracey Jennewine
Address:	2859 Oxford Boulevard, Suite 110	Copy To:	Eric Iltle	Company Name:	Letterle & Associates
Email To:	Allison Park, PA 15101	Purchase Order No.:		Address:	
Phone:	412-486-0600	Project Name:	Route 119 Amoco	Parent Project Reference:	
Requested Due Date/AT:	Standard	Project Number:	031	Message:	Rachel Christner
				Parent Profile #:	520

REGULATORY AGENCY	
☐ NPDES	☐ GROUND WATER
☒ UST	☐ RCRA
☐ OTHER	
Site Location	PA
STATE:	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DW WT WW P SL OL VSP AR OT TS	MATRIX CODE (A-Z, 0-9 / -)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test	Y/N	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	BTEX	MTBE			Cumene	Naphthalene										

| 1 | | MW-3 | WT | G | 1340 | 1350 | | 3 | |

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	GAMITH PROS	12/21/10	1:30	GAMITH PROS	12/21/10	10:15	
				JACO JAMITH	12/21/10	13:00	Y N Y

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on	Custody	Samples Intact
PRINT Name of SAMPLER:	YANUST-JAM CTR			(Y/N)	(Y/N)
SIGNATURE of SAMPLER:	YANUST-JAM			(Y/N)	(Y/N)
DATE Signed (MM/DD/YY):					

*Important Note: By signing this form you are accepting Pace's NET 30 Day payment terms and agreeing to hold Pace harmless for any damages or costs incurred by Pace.

February 10, 2011

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

RE: Project: 031 Route 119
Pace Project No.: 3040678

Dear Mr. Croasmun:

Enclosed are the analytical results for sample(s) received by the laboratory on January 28, 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 Christner

rachel.christner@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 031 Route 119
Pace Project No.: 3040678

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 031 Route 119
Pace Project No.: 3040678

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3040678001	MW-4	Water	01/28/11 12:15	01/28/11 16:15
3040678002	MW-6	Water	01/28/11 12:35	01/28/11 16:15
3040678003	MW-7	Water	01/28/11 11:45	01/28/11 16:15
3040678004	MW-8	Water	01/28/11 11:45	01/28/11 16:15
3040678005	MW-10	Water	01/28/11 12:05	01/28/11 16:15
3040678006	MW-11	Water	01/28/11 12:00	01/28/11 16:15
3040678007	MW-12	Water	01/28/11 13:00	01/28/11 16:15
3040678008	MW-13	Water	01/28/11 12:30	01/28/11 16:15
3040678009	MW-14S	Water	01/28/11 12:45	01/28/11 16:15
3040678010	MW-15S	Water	01/28/11 13:15	01/28/11 16:15
3040678011	MW-16	Water	01/28/11 13:00	01/28/11 16:15
3040678012	MW-17	Water	01/28/11 12:40	01/28/11 16:15
3040678013	Duplicate	Water	01/28/11 00:01	01/28/11 16:15
3040678014	Trip Blank	Water	01/28/11 00:01	01/28/11 16:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 031 Route 119
Pace Project No.: 3040678

Lab ID	Sample ID	Method	Analysts	Analytes Reported
3040678001	MW-4	EPA 8260	MAK	10
3040678002	MW-6	EPA 8260	MAK	10
3040678003	MW-7	EPA 8260	MAK	10
3040678004	MW-8	EPA 8260	MAK	10
3040678005	MW-10	EPA 8260	MAK	10
3040678006	MW-11	EPA 8260	MAK	10
3040678007	MW-12	EPA 8260	MAK	10
3040678008	MW-13	EPA 8260	MAK	10
3040678009	MW-14S	EPA 8260	MAK	10
3040678010	MW-15S	EPA 8260	MAK	10
3040678011	MW-16	EPA 8260	MAK	10
3040678012	MW-17	EPA 8260	MAK	10
3040678013	Duplicate	EPA 8260	MAK	10
3040678014	Trip Blank	EPA 8260	MAK	10

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 031 Route 119

Pace Project No.: 3040678

Sample: MW-4		Lab ID: 3040678001		Collected: 01/28/11 12:15		Received: 01/28/11 16:15		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	0.30	1		02/01/11 01:55	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		02/01/11 01:55	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 01:55	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.10	1		02/01/11 01:55	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 01:55	91-20-3	
Toluene	ND	ug/L	1.0	0.58	1		02/01/11 01:55	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.51	1		02/01/11 01:55	1330-20-7	
Toluene-d8 (S)	95 %		70-130		1		02/01/11 01:55	2037-26-5	
4-Bromofluorobenzene (S)	101 %		70-130		1		02/01/11 01:55	460-00-4	
1,2-Dichloroethane-d4 (S)	95 %		70-130		1		02/01/11 01:55	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119

Pace Project No.: 3040678

Sample: MW-6		Lab ID: 3040678002		Collected: 01/28/11 12:35		Received: 01/28/11 16:15		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	0.30	1		02/01/11 02:20	71-43-2	
Ethylbenzene	ND ug/L		1.0	0.15	1		02/01/11 02:20	100-41-4	
Isopropylbenzene (Cumene)	ND ug/L		1.0	0.10	1		02/01/11 02:20	98-82-8	
Methyl-tert-butyl ether	ND ug/L		1.0	0.10	1		02/01/11 02:20	1634-04-4	
Naphthalene	ND ug/L		2.0	0.32	1		02/01/11 02:20	91-20-3	
Toluene	ND ug/L		1.0	0.58	1		02/01/11 02:20	108-88-3	
Xylene (Total)	ND ug/L		3.0	0.51	1		02/01/11 02:20	1330-20-7	
Toluene-d8 (S)	96 %		70-130		1		02/01/11 02:20	2037-26-5	
4-Bromofluorobenzene (S)	98 %		70-130		1		02/01/11 02:20	460-00-4	
1,2-Dichloroethane-d4 (S)	100 %		70-130		1		02/01/11 02:20	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-7		Lab ID: 3040678003	Collected: 01/28/11 11:45	Received: 01/28/11 16:15	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	0.30	1		02/01/11 02:44	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		02/01/11 02:44	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 02:44	98-82-8	
Methyl-tert-butyl ether	6.0	ug/L	1.0	0.10	1		02/01/11 02:44	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 02:44	91-20-3	
Toluene	ND	ug/L	1.0	0.58	1		02/01/11 02:44	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.51	1		02/01/11 02:44	1330-20-7	
Toluene-d8 (S)	99 %		70-130		1		02/01/11 02:44	2037-26-5	
4-Bromofluorobenzene (S)	98 %		70-130		1		02/01/11 02:44	460-00-4	
1,2-Dichloroethane-d4 (S)	98 %		70-130		1		02/01/11 02:44	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-8		Lab ID: 3040678004		Collected: 01/28/11 11:45		Received: 01/28/11 16:15		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	0.30	1		02/01/11 03:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		02/01/11 03:08	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 03:08	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.10	1		02/01/11 03:08	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 03:08	91-20-3	
Toluene	ND	ug/L	1.0	0.58	1		02/01/11 03:08	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.51	1		02/01/11 03:08	1330-20-7	
Toluene-d8 (S)	96 %		70-130		1		02/01/11 03:08	2037-26-5	
4-Bromofluorobenzene (S)	100 %		70-130		1		02/01/11 03:08	460-00-4	
1,2-Dichloroethane-d4 (S)	98 %		70-130		1		02/01/11 03:08	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-10		Lab ID: 3040678005		Collected: 01/28/11 12:05		Received: 01/28/11 16:15		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	0.30	1		02/01/11 03:32	71-43-2	
Ethylbenzene	ND ug/L		1.0	0.15	1		02/01/11 03:32	100-41-4	
Isopropylbenzene (Cumene)	ND ug/L		1.0	0.10	1		02/01/11 03:32	98-82-8	
Methyl-tert-butyl ether	ND ug/L		1.0	0.10	1		02/01/11 03:32	1634-04-4	
Naphthalene	ND ug/L		2.0	0.32	1		02/01/11 03:32	91-20-3	
Toluene	ND ug/L		1.0	0.58	1		02/01/11 03:32	108-88-3	
Xylene (Total)	ND ug/L		3.0	0.51	1		02/01/11 03:32	1330-20-7	
Toluene-d8 (S)	95 %		70-130		1		02/01/11 03:32	2037-26-5	
4-Bromofluorobenzene (S)	98 %		70-130		1		02/01/11 03:32	460-00-4	
1,2-Dichloroethane-d4 (S)	99 %		70-130		1		02/01/11 03:32	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119

Pace Project No.: 3040678

Sample: MW-11		Lab ID: 3040678006		Collected: 01/28/11 12:00		Received: 01/28/11 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	1370	ug/L	20.0	6.0	20		02/01/11 04:21	71-43-2	
Ethylbenzene	548	ug/L	20.0	3.0	20		02/01/11 04:21	100-41-4	
Isopropylbenzene (Cumene)	57.7	ug/L	1.0	0.10	1		02/01/11 03:57	98-82-8	
Methyl-tert-butyl ether	447	ug/L	20.0	2.0	20		02/01/11 04:21	1634-04-4	
Naphthalene	152	ug/L	2.0	0.32	1		02/01/11 03:57	91-20-3	
Toluene	72.8	ug/L	1.0	0.58	1		02/01/11 03:57	108-88-3	
Xylene (Total)	305	ug/L	3.0	0.51	1		02/01/11 03:57	1330-20-7	
Toluene-d8 (S)	96	%	70-130		1		02/01/11 03:57	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		02/01/11 03:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/01/11 03:57	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-12		Lab ID: 3040678007		Collected: 01/28/11 13:00		Received: 01/28/11 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	89.2	ug/L	1.0	0.30	1		02/01/11 04:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		02/01/11 04:45	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 04:45	98-82-8	
Methyl-tert-butyl ether	314	ug/L	1.0	0.10	1		02/01/11 04:45	1634-04-4	
Naphthalene	2.2	ug/L	2.0	0.32	1		02/01/11 04:45	91-20-3	
Toluene	1.2	ug/L	1.0	0.58	1		02/01/11 04:45	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.51	1		02/01/11 04:45	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		02/01/11 04:45	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		02/01/11 04:45	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		02/01/11 04:45	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-13		Lab ID: 3040678008		Collected: 01/28/11 12:30		Received: 01/28/11 16:15		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	0.30	1		02/01/11 05:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		02/01/11 05:09	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 05:09	98-82-8	
Methyl-tert-butyl ether	1.8	ug/L	1.0	0.10	1		02/01/11 05:09	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 05:09	91-20-3	
Toluene	ND	ug/L	1.0	0.58	1		02/01/11 05:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.51	1		02/01/11 05:09	1330-20-7	
Toluene-d8 (S)	93	%	70-130		1		02/01/11 05:09	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		02/01/11 05:09	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		02/01/11 05:09	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-14S		Lab ID: 3040678009		Collected: 01/28/11 12:45		Received: 01/28/11 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	36.5	ug/L	1.0	0.30	1		02/01/11 05:33	71-43-2	
Ethylbenzene	18.6	ug/L	1.0	0.15	1		02/01/11 05:33	100-41-4	
Isopropylbenzene (Cumene)	6.4	ug/L	1.0	0.10	1		02/01/11 05:33	98-82-8	
Methyl-tert-butyl ether	22.1	ug/L	1.0	0.10	1		02/01/11 05:33	1634-04-4	
Naphthalene	5.8	ug/L	2.0	0.32	1		02/01/11 05:33	91-20-3	
Toluene	2.3	ug/L	1.0	0.58	1		02/01/11 05:33	108-88-3	
Xylene (Total)	9.5	ug/L	3.0	0.51	1		02/01/11 05:33	1330-20-7	
Toluene-d8 (S)	96	%	70-130		1		02/01/11 05:33	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130		1		02/01/11 05:33	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		02/01/11 05:33	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-15S		Lab ID: 3040678010	Collected: 01/28/11 13:15		Received: 01/28/11 16:15		Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	14.8 ug/L		1.0	0.30	1		02/01/11 05:58	71-43-2	
Ethylbenzene	1.2 ug/L		1.0	0.15	1		02/01/11 05:58	100-41-4	
Isopropylbenzene (Cumene)	ND ug/L		1.0	0.10	1		02/01/11 05:58	98-82-8	
Methyl-tert-butyl ether	7.8 ug/L		1.0	0.10	1		02/01/11 05:58	1634-04-4	
Naphthalene	ND ug/L		2.0	0.32	1		02/01/11 05:58	91-20-3	
Toluene	1.4 ug/L		1.0	0.58	1		02/01/11 05:58	108-88-3	
Xylene (Total)	3.0 ug/L		3.0	0.51	1		02/01/11 05:58	1330-20-7	
Toluene-d8 (S)	95 %		70-130		1		02/01/11 05:58	2037-26-5	
4-Bromofluorobenzene (S)	100 %		70-130		1		02/01/11 05:58	460-00-4	
1,2-Dichloroethane-d4 (S)	97 %		70-130		1		02/01/11 05:58	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-16		Lab ID: 3040678011		Collected: 01/28/11 13:00		Received: 01/28/11 16:15		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	0.30	1		02/01/11 06:22	71-43-2	
Ethylbenzene	1.0	ug/L	1.0	0.15	1		02/01/11 06:22	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 06:22	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.10	1		02/01/11 06:22	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 06:22	91-20-3	
Toluene	4.3	ug/L	1.0	0.58	1		02/01/11 06:22	108-88-3	
Xylene (Total)	14.8	ug/L	3.0	0.51	1		02/01/11 06:22	1330-20-7	
Toluene-d8 (S)	95	%	70-130		1		02/01/11 06:22	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		02/01/11 06:22	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		02/01/11 06:22	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: MW-17		Lab ID: 3040678012		Collected: 01/28/11 12:40		Received: 01/28/11 16:15		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	0.30	1		02/01/11 06:46	71-43-2	
Ethylbenzene	1.0	ug/L	1.0	0.15	1		02/01/11 06:46	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 06:46	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.10	1		02/01/11 06:46	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 06:46	91-20-3	
Toluene	3.5	ug/L	1.0	0.58	1		02/01/11 06:46	108-88-3	
Xylene (Total)	5.4	ug/L	3.0	0.51	1		02/01/11 06:46	1330-20-7	
Toluene-d8 (S)	94	%	70-130		1		02/01/11 06:46	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		02/01/11 06:46	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		02/01/11 06:46	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: Duplicate		Lab ID: 3040678013		Collected: 01/28/11 00:01		Received: 01/28/11 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV PA UST		Analytical Method: EPA 8260							
Benzene	1350	ug/L	20.0	6.0	20		02/01/11 07:35	71-43-2	
Ethylbenzene	548	ug/L	20.0	3.0	20		02/01/11 07:35	100-41-4	
Isopropylbenzene (Cumene)	62.7	ug/L	1.0	0.10	1		02/01/11 07:11	98-82-8	
Methyl-tert-butyl ether	444	ug/L	20.0	2.0	20		02/01/11 07:35	1634-04-4	
Naphthalene	152	ug/L	2.0	0.32	1		02/01/11 07:11	91-20-3	
Toluene	77.2	ug/L	1.0	0.58	1		02/01/11 07:11	108-88-3	
Xylene (Total)	329	ug/L	3.0	0.51	1		02/01/11 07:11	1330-20-7	
Toluene-d8 (S)	98	%	70-130		1		02/01/11 07:11	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		02/01/11 07:11	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		02/01/11 07:11	17060-07-0	

ANALYTICAL RESULTS

Project: 031 Route 119
Pace Project No.: 3040678

Sample: Trip Blank		Lab ID: 3040678014	Collected: 01/28/11 00:01	Received: 01/28/11 16:15	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	0.30	1		02/01/11 07:59	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		02/01/11 07:59	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		02/01/11 07:59	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.10	1		02/01/11 07:59	1634-04-4	
Naphthalene	ND	ug/L	2.0	0.32	1		02/01/11 07:59	91-20-3	
Toluene	ND	ug/L	1.0	0.58	1		02/01/11 07:59	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.51	1		02/01/11 07:59	1330-20-7	
Toluene-d8 (S)	98 %		70-130		1		02/01/11 07:59	2037-26-5	
4-Bromofluorobenzene (S)	98 %		70-130		1		02/01/11 07:59	460-00-4	
1,2-Dichloroethane-d4 (S)	95 %		70-130		1		02/01/11 07:59	17060-07-0	

QUALITY CONTROL DATA

Project: 031 Route 119
Pace Project No.: 3040678

QC Batch: MSV/8382 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 3040678001, 3040678002, 3040678003, 3040678004, 3040678005, 3040678006, 3040678007, 3040678008, 3040678009, 3040678010, 3040678011, 3040678012, 3040678013, 3040678014

METHOD BLANK: 262777 Matrix: Water
Associated Lab Samples: 3040678001, 3040678002, 3040678003, 3040678004, 3040678005, 3040678006, 3040678007, 3040678008, 3040678009, 3040678010, 3040678011, 3040678012, 3040678013, 3040678014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/31/11 23:54	
Ethylbenzene	ug/L	ND	1.0	01/31/11 23:54	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/31/11 23:54	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/31/11 23:54	
Naphthalene	ug/L	ND	2.0	01/31/11 23:54	
Toluene	ug/L	ND	1.0	01/31/11 23:54	
Xylene (Total)	ug/L	ND	3.0	01/31/11 23:54	
1,2-Dichloroethane-d4 (S)	%	97	70-130	01/31/11 23:54	
4-Bromofluorobenzene (S)	%	98	70-130	01/31/11 23:54	
Toluene-d8 (S)	%	93	70-130	01/31/11 23:54	

LABORATORY CONTROL SAMPLE: 262778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.3	91	70-130	
Ethylbenzene	ug/L	20	18.5	92	70-130	
Isopropylbenzene (Cumene)	ug/L	20	19.3	97	70-130	
Methyl-tert-butyl ether	ug/L	20	19.8	99	70-130	
Naphthalene	ug/L	20	17.0	85	70-130	
Toluene	ug/L	20	18.5	92	70-130	
Xylene (Total)	ug/L	60	56.4	94	70-130	
1,2-Dichloroethane-d4 (S)	%			102	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			94	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 262934 262935

Parameter	Units	3040678001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Benzene	ug/L	ND	20	20	21.5	20.6	107	103	70-130	4	30
Ethylbenzene	ug/L	ND	20	20	20.5	20.8	103	104	70-130	1	30
Isopropylbenzene (Cumene)	ug/L	ND	20	20	22.0	22.9	110	114	70-130	4	30
Methyl-tert-butyl ether	ug/L	ND	20	20	20.7	22.9	103	115	70-130	10	30
Naphthalene	ug/L	ND	20	20	16.2	17.6	81	88	70-130	8	30
Toluene	ug/L	ND	20	20	20.9	21.0	105	105	70-130	3	30
Xylene (Total)	ug/L	ND	60	60	62.5	64.3	104	107	70-130	3	30
1,2-Dichloroethane-d4 (S)	%						101	88	70-130		
4-Bromofluorobenzene (S)	%						100	102	70-130		

Date: 02/10/2011 05:38 PM

REPORT OF LABORATORY ANALYSIS

Page 19 of 21

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QUALITY CONTROL DATA

Project: 031 Route 119
Pace Project No.: 3040678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 262934 262935												
Parameter	Units	3040678001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Toluene-d8 (S)	%						96	93	70-130			

QUALIFIERS

Project: 031 Route 119
Pace Project No.: 3040678

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.

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical
www.pacelabs.com

Section A Required Client Information: Company: LETTERE & ASSOCIATES Address: 2850 Oxford Blvd Suite 110 Allison Park, PA 15101 Email To: ALCON@paceanalytical.com Phone: 412-486-0600 Fax: Requested Due Date/TAT: NORMAL		Section B Required Project Information: Report To: Copy To: Purchase Order No.: Project Name: ROUTE 119 Project Number: 031		Section C Invoice Information: Attention: Company Name: Address: Pace Quote Reference: Pace Project Manager: Pace Profile #:		Page: 1 of 2 1441064 REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☒ UST ☐ RCRA ☐ OTHER Site Location: PA STATE:	
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ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED		SAMPLE TYPE (G=GRAB G=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test ↓	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Custody	Sealed Cooler	Samples Intact (Y/N)	
			DATE	TIME													
1	SAMPLE ID (A-Z, 0-9 /, -) Sample IDs MUST BE UNIQUE	DW	DATE	TIME	WT-G												
2		WT	1-28	12:15													
3		WW															
4		P															
5		SL															
6		OL															
7		WP															
8		AR															
9		TS															
10		Other															
11																	
12																	
ADDITIONAL COMMENTS: 68m Area 1/28/11 4:15 RELINQUISHED BY / AFFILIATION: J.H. 1/28-11 DATE: 1/28-11 TIME: 3:15 ACCEPTED BY / AFFILIATION: James W. Hopper DATE: 1-28-11 TIME: 16:15 SAMPLE CONDITIONS: Y N Y																	

ORIGINAL		SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: JAMES W. HOPPER SIGNATURE of SAMPLER: <i>James W. Hopper</i>	
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APPENDIX F

Mann-Kendall Statistical Tests

**State of Wisconsin
Department of Natural Resources**

Remediation and Redevelopment Program

Notice: This form is the UNK supplied spreadsheet referenced in Appendices A of Comm 46 and NK 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	Concentration		Concentration		Concentration	
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)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	18-Dec-08	480.00	153.00	76.40						
2	24-Mar-09	629.00	255.00	63.00						
3	5-Jun-09	723.00	186.00	88.10						
4	17-Aug-09	676.00	265.00	90.70						
5	5-Nov-09	921.00	334.00	148.00						
6	25-Mar-10	782.00	449.00	113.00						
7	25-Jun-10	310.00	168.00	21.60						
8	27-Aug-10	611.00	270.00	72.70						
9	20-Dec-10	764.00	236.00	91.50						
10	28-Jan-11	1,370.00	314.00	152.00						

Mann Kendall Statistic (S) =	15.0	15.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =	10	10	10	0	0	0
Average =	726.60	263.00	91.70	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	282.066	88.279	38.882	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.388	0.336	0.424	#DIV/0!	#DIV/0!	#DIV/0!

Error Check, Blank if No Errors Detected	n<4					
Trend ≥ 80% Confidence Level	INCREASING	INCREASING	INCREASING	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	NA	NA	NA	n<4	n<4	n<4

Data Entry By = E	Date = 14-Feb-11	Checked By = NC
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State of Wisconsin

Department of Natural Resources

Remediation and Redevelopment Program

Notice: This form is the DNK supplied spreadsheet referenced in Appendices A of Comm 46 and NK /46, 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

BRTS No. =

Well Number = MW-12

Compound ->		Benzene		MTBE		Concentration		Concentration		Concentration		Concentration	
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	18-Dec-08	3.80		31.70									
2	24-Mar-09	4.30		70.90									
3	5-Jun-09	1.60		52.50									
4	17-Aug-09	0.50		114.00									
5	5-Nov-09	1.70		89.00									
6	25-Mar-10	0.50		144.00									
7	25-Jun-10	5.00		159.00									
8	27-Aug-10	39.70		361.00									
9	20-Dec-10	14.60		181.00									
10	28-Jan-11	89.20		314.00									

Mann Kendall Statistic (S) =	20.0	37.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of Rounds (n) =	10	10	10	10	10	10	10	10	10	10	10	10	10
Average =	16.09	151.71	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Standard Deviation =	28.325	109.159	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	1.760	0.720	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

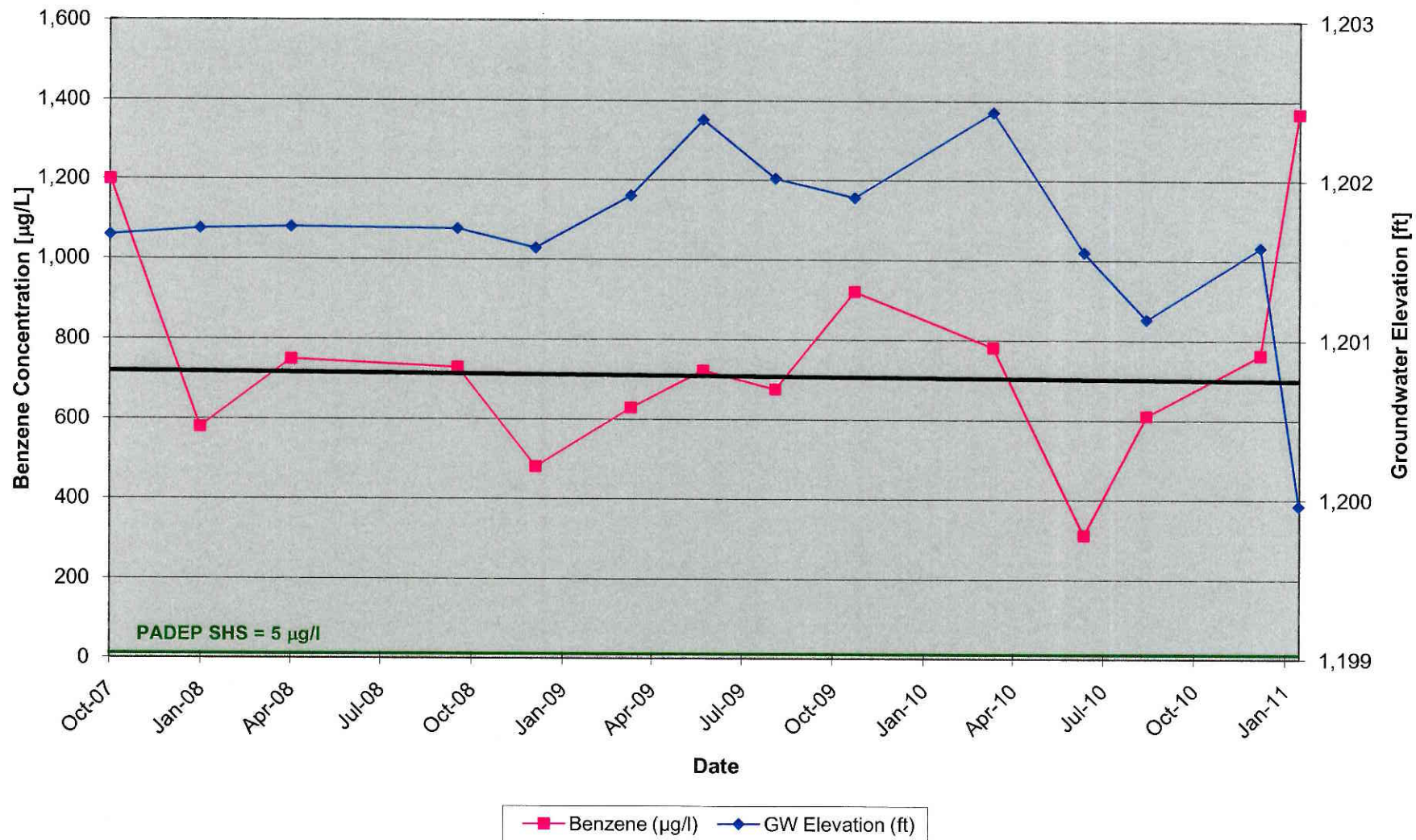
Error Check, Blank if No Errors Detected	n<4												n<4
Trend ≥ 80% Confidence Level	INCREASING												n<4
Trend ≥ 90% Confidence Level	INCREASING												n<4
Stability Test, If No Trend Exists at 80% Confidence Level	NA												n<4

Data Entry By = El	Date = 14-Feb-11	Checked By = NC
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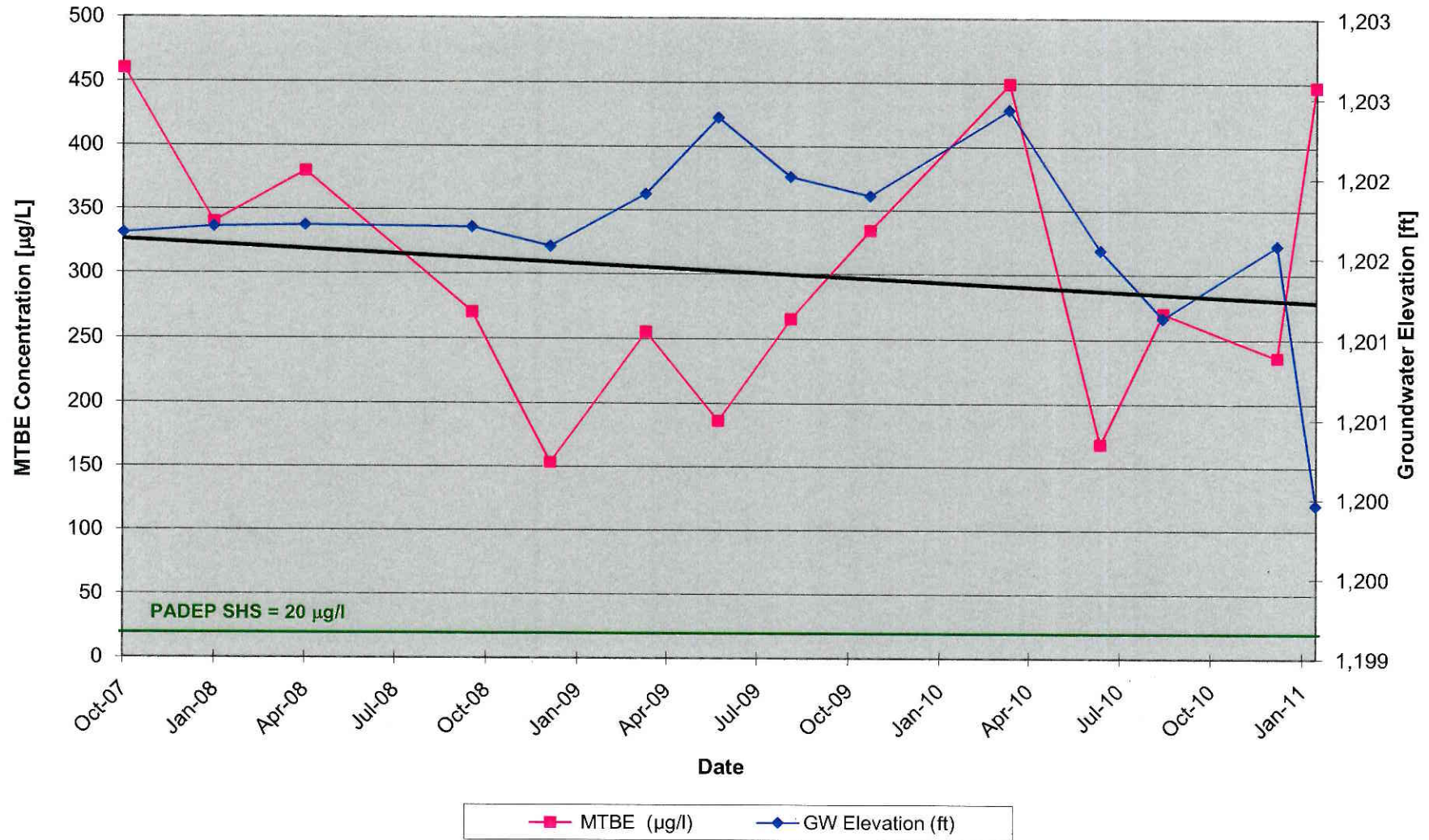
APPENDIX G

Benzene/MTBE/Naphthalene versus Groundwater Elevation Trend Graphs

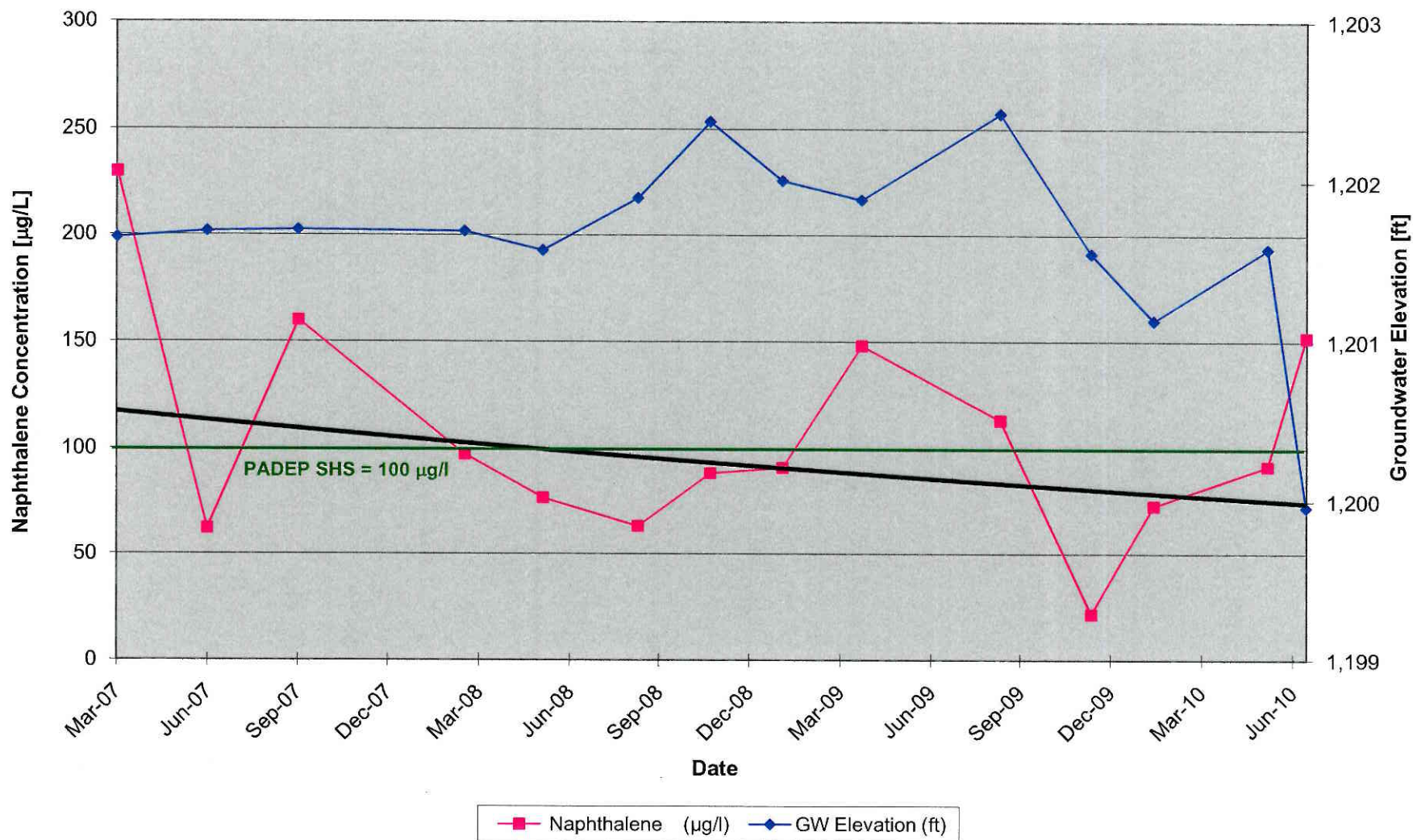
Rt. 119 Amoco - Dunbar, Pennsylvania
Benzene Concentration and Groundwater Elevation Change Over Time in MW-11



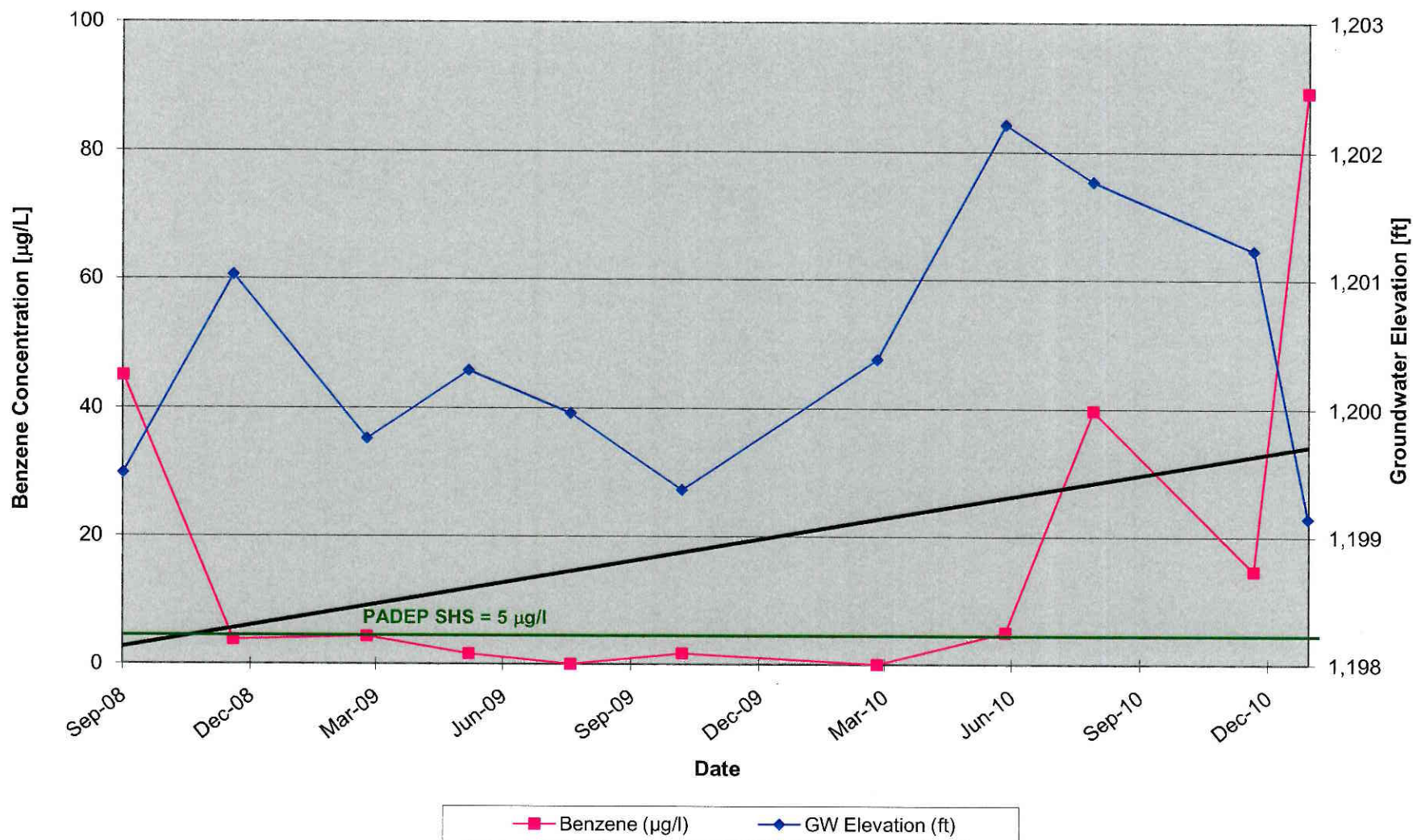
Rt. 119 Amoco - Dunbar, Pennsylvania
MTBE Concentration and Groundwater Elevation Change Over Time in MW-11



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



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



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

