FACILITY NAME:	**Vennard Crossroads Convenience, Inc.**
FACILITY ID #:	**32-81802**
REPORT/PLAN PREPARER:	**Mountain Research, LLC**
(Name of Company,	**Michael E. Kern, P.G.**
Individual & Phone #)	**(814) 949-2034, Ext. 251**

CORRECTIVE ACTION PROCESS REPORT/PLAN COVER SHEET

CHAPTER 245 STORAGE TANK ACT

- ☐ Site Characterization Report - Section 245.310(b)
- ☐ Site Characterization Report - Section 245.310(a)
- ☐ Site Characterization Report - Site-Specific Standard
- ■ Site Characterization Report - Statewide Health or Background 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

(Check all that apply to the enclosed submission)

SITE CHARACTERIZATION REPORT

VENNARD CROSSROADS CONVENIENCE, INC.
4985 LUCERNE ROAD
WHITE TOWNSHIP, INDIANA COUNTY, PENNSYLVANIA
PADEP FACILITY ID #32-81802
USTIF CLAIM #2015-0116(L)

PROFESSIONAL CERTIFICATION:

Professional Geologist:

Print or Type Name: Michael E. Kern, P.G.

Signature:

Date:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL E. KERN
GEOLOGIST
No. PG4757

MOUNTAIN RESEARCH, LLC

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VENNARD'S\SCR REPORT\SCR REPORT APX - 1116
Project No. 4644.15.01

SITE CHARACTERIZATION REPORT

VENNARD CROSSROADS CONVENIENCE, INC.
4985 LUCERNE ROAD
WHITE TOWNSHIP, INDIANA COUNTY, PENNSYLVANIA
PADEP FACILITY ID #32-81802
USTIF CLAIM #2015-0116(L)

Prepared for

MR. RICHARD VENNARD
VENNARD'S CROSSROADS CONVENIENCE, INC.
WHITE TOWNSHIP, PENNSYLVANIA

Prepared by

MOUNTAIN RESEARCH, LLC
ALTOONA, PENNSYLVANIA

NOVEMBER 2016

Prepared by: _____ **Reviewed by:** _____

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VENNARD'S\SCR REPORT\SCR REPORT APX - 1116
Project No. 4644.15.01

November 15, 2016

Mr. Michael Hartley
Pennsylvania Department of Environmental Protection
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222-4745

RE: **Site Characterization Report**
Vennard Crossroads Convenience, Inc.
4985 Lucerne Road
White Township, Indiana County, Pennsylvania
PADEP Facility ID #32-81802
USTIF Claim #2015-0116(I)

Dear Mr. Hartley:

Please find enclosed an original of the Site Characterization Report prepared by Mountain Research, LLC for the above-referenced site.

Should you have any questions regarding the report or require any additional documentation in order to complete the report review and approval process, please contact the undersigned.

Sincerely,
MOUNTAIN RESEARCH, LLC

Michael E. Kern, P.G.
Project Manager III

MEK:ll
Enclosure

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SITE CHARACTERIZATION REPORT

Vennard Crossroads Convenience, Inc.
4985 Lucerne Road
White Township, Indiana County, Pennsylvania
PADEP Facility ID #32-81802
USTIF Claim #2015-0116(I)

1.0 EXECUTIVE SUMMARY

- Physical and olfactory evidence of a petroleum release identified during Phase 2 activities conducted in September 2015 prompted Site Characterization activities.

- An overburden aquifer is identified at the site. Groundwater gradient within the overburden is toward southwest.

- Analytical results for groundwater samples collected from overburden monitoring wells identified 1,2,4-trimethylbenzene, benzene, and MTBE at concentrations above their respective Pennsylvania Department of Environmental Protection (PADEP) Residential Used Aquifer (RUA) Medium Specific Concentration (MSC) in monitoring wells MW-2, MW-4, MW-7, and/or MW-8. Concentrations of all remaining analyzed constituents were either below laboratory detection limits or below their respective PADEP RUA groundwater MSC in all other analyzed overburden monitoring wells. Additional site characterization activities are warranted to determine if bedrock groundwater is impacted by detectable concentrations of petroleum constituents.

- Additional site characterization activities are warranted to quantitatively evaluate bedrock aquifer water quality and determine if identified overburden groundwater impacts have migrated vertically downward.

- Additional site characterization activities are warranted to quantitatively evaluate soil vapor conditions at the site.

- Fate and transport modeling indicates benzene will migrate beyond the subject property's western property boundary at concentrations above the current PADEP RUA groundwater MSC within the next 30 years. 1,2,4-trimethylbenzene is not predicted to migrate beyond the subject property's western boundary at concentrations above the current PADEP RUA groundwater MSC over the next 30 years. MTBE was not modeled because it has not been consistently identified above its PADEP RUA groundwater MSC.

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1.0 EXECUTIVE SUMMARY (Continued)

- The proposed remedial standard for the property is the non-residential statewide health standard (SHS) for soil and groundwater.

- Air sparge coupled with soil vapor extraction is the remedial technology of choice, however feasibility studies will be required to ensure this technology is appropriate for site conditions.

2.0 INTRODUCTION

A petroleum release was identified at the Vennard's Crossroads Convenience Inc. Property (hereafter referred to as Vennard's or subject property) during a Phase II Environmental Site Assessment conducted on September 3, 2015. Based on the presence of petroleum impacted soil and groundwater, a PADEP Site Characterization/Site Characterization Report (SCR) was warranted.

Mountain Research, LLC (Mountain Research) was retained by Vennard's in September 2015 to complete site characterization activities for the site located in White Township, Indiana County, Pennsylvania.

Site characterization activities were conducted in accordance with Title 25, Chapter 245, Administration of Storage Tanks and Spill Prevention Program, Subchapter D, Section 309. This characterization report is submitted in accordance with Section 310(c), SCR.

The following site characterization objectives were developed by Mountain Research to meet the regulations mentioned above:

- Identify the extent of impacted groundwater.
- Identify the extent of impacted soil.
- Describe the study area geology, hydrogeology, aquifer characteristics, and physical parameters such that a remediation standard and strategy for the site can be selected.
- Develop a site conceptual model from which the fate and transport of constituents can be evaluated by modeling or analysis.
- Evaluate potential VIB risks.

The activities conducted and used for characterization of the site include the following:

- Geophysical Investigation
- Advancement of 17 soil borings
- Collection and analysis of soil samples from soil borings
- Installation of eight (8) overburden monitoring wells
- Collection and analysis of groundwater samples from overburden monitoring wells
- Measurement of overburden groundwater elevations and deriving direction of groundwater flow and gradient from these measurements

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2.0 INTRODUCTION (Continued)

- Aquifer testing
- Development of conceptual site model
- Fate and transport modeling
- Identification of potential preferential pathways for groundwater and/or vapor migration
- Vapor Intrusion into Buildings (VIB) risk evaluation
- Professional site survey

2.1 Constituents of Concern

Groundwater and soil samples have been analyzed for the following petroleum parameters: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, MTBE, cumene, and naphthalene. Based on analytical results, the following parameters have been identified at detectable levels in the listed media and are therefore identified as the constituents of concern (COCs):

Groundwater: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, MTBE, cumene, and naphthalene.

Soil: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, cumene, and naphthalene.

2.2 Media of Concern

Soil and groundwater are identified to contain detectable concentrations of COCs and are therefore considered media of concern at the site.

2.3 Remediation Standard

The remediation standard goal for the property is the PADEP RUA SHS for soil and groundwater.

3.0 SITE DESCRIPTION

The study area (Site) consists of an approximate 0.63 acre rectangular plot of land located at physical address 4985 Lucerne Road within White Township, Indiana County, Pennsylvania. The Site is surrounded by residential and commercial properties. The Site is located in the central portion of the USGS 7.5 Minute Series Indiana, Pennsylvania Topographic Quadrangle at an approximate Latitude 40°, 34', 33.21" North and Longitude 79°, 07', 59.63" West. The property has an approximate elevation of 1,285 feet above mean sea level. Refer to **Figure 1** for a site location map, **Figure 2** for an aerial site map, and **Figure 3** for a site map.

3.0 SITE DESCRIPTION (Continued)

The subject property is surrounded by the following:

Lucerne Road to the south, beyond which is a hair salon. A vacant grass lot to the west, beyond which are residential apartments/townhouses. An Engineering business to the north, beyond which is wooded land. State Route 954 to the east, beyond which is a residential dwelling. An unnamed tributary is located approximately 290 feet northwest of the release area.

Refer to **Figure 3** for a map showing property boundaries.

3.1 Historic and Current Operations

Prior to its development, the subject property was undeveloped land. The property was acquired by current deed holders Mr. Richard R. Vennard and Ms. Nancy L. Vennard on August 16, 1989. The property is believed to have first been developed in the mid to late 1980's or early 1990 with the one-story building with full below ground basement and underground storage tank (UST) system currently on the property. The subject property is currently used as a convenience store with gasoline and diesel sales.

3.2 Site Features

The subject property consists of a one-story building having a buried basement and upper floor retail space. The petroleum system consists of a canopy housing retail dispensers and a UST system. The UST system is comprised of a 12,000-gallon compartmentalized UST, product delivery lines, and three (3) product dispensers located approximately 50 feet south of the UST. The compartmentalized UST has three (3) compartments for storage of diesel and two (2) qualities of gasoline. The compartments include one (1) 6,000-gallon compartment, one (1) 4,000-gallon compartment, and one (1) 2,000-gallon compartment. The ground surface on the subject property is mostly covered with pavement with minimal grass covered areas. Refer to **Figure 3** for locations of site features.

3.2.1 Utilities

Underground utilities located at the subject property include natural gas, municipal water, electric, communication lines, storm sewer, and sanitary sewer. Natural gas and municipal water laterals run beneath the southern portion of the subject property and enter the southern side of the building at an approximate depth of 3 feet below surface. The storm sewer line runs along the western property boundary with a storm sewer grate located within the western portion of the property. This storm system is diverted to the south across Lucerne Road. All storm line depths range from 3 to 5 feet below surface. The sanitary sewer line runs along the northern property boundary and enters the northwest corner of the building at an approximate 8 foot depth. Underground electric and communication lines run along the western property boundary and enter the western side of the building at a depth of approximately 3 feet. In addition, underground electric lines run from the store to the dispenser island and to a sign located near the southeast corner of the property at a depth of approximately 2 feet. Refer to **Figure 4** for the approximate locations of underground utilities.

4.0 INTERIM REMEDIAL ACTIONS

No interim remedial activities have been conducted at the site.

5.0 SOURCE OF PETROLEUM IMPACTS

The source of the release identified during the investigation was a failed fitting on the diesel dispenser located in the central portion of the subject property. Once the failure was identified (in September 2015), the owner (Mr. Vennard) repaired the fitting and restored the integrity of the dispenser. The release is believed to have been chronic in nature. The release date and the volume of released product is unknown. Non-Aqueous Phase Liquid (LNAPL) is identified in a UST field monitoring point identified as a former sump.

5.1 Characteristics of Regulated Substance

Based on the source of the release (diesel dispenser), it is interpreted that the regulated substance released at the site is diesel. 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, MTBE, cumene, and naphthalene have been identified at detectable concentrations in soil and/or groundwater. The characteristics of the aforementioned constituents are summarized in **Appendix A**.

6.0 WATER SUPPLIES

No potable wells are located on the subject property. Public water is provided to the subject property and surrounding properties by Central Indiana County Water Authority. Central Indiana County Water Authority obtains water from Yellow Creek Reservoir, located approximately two (2) miles east of the site. White Township has an ordinance in place that requires all properties within 150 feet of a public water supply line to be connected to the public water supply system. Refer to **Appendix B** for a copy of the ordinance.

The Pennsylvania Groundwater Information System (PaGWIS) and an Environmental Database Review Report (EDR) were reviewed to locate potential water supplies and did not identify any wells within ¼ mile of the subject property. Refer to **Appendix C** for a copy of the PaGWIS results and **Appendix D** for a copy of the EDR.

6.1 Restore or Replacement of Affected Supplies

Replacement and restoration of water supplies was not deemed necessary and was not performed.

6.2 Potentially Affected Supplies

Due to the distance between the site and the public water supplies, a petroleum release emanating from the site is unlikely to affect the public water supplies.

6.3 Affected Water Supplies

Due to the distance between the site and the public water supplies, the public water supplies are not likely to have not been affected by the petroleum release at the site.

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7.0 METHODS AND EQUIPMENT

In order to delineate the extent and magnitude of petroleum impacts to media at the site, Vennard's retained the services of Mountain Research in September 2015 to conduct a site characterization on the subject property. The following site characterization activities were conducted:

- Geophysical Investigation for underground utilities or other sources
- Advancement of 17 soil borings
- Collection and analysis of soil samples from soil borings
- Installation of eight (8) overburden monitoring wells
- Collection and analysis of groundwater samples from overburden monitoring wells
- Measurement of overburden groundwater elevations and deriving direction of groundwater flow and gradient from these measurements
- Aquifer testing
- Professional site survey

Refer to **Figure 3** for monitoring well locations and **Figure 5** for soil boring locations. Field methods for drilling, well installation, and groundwater sample collection are described in **Appendix E**. Other data collection or sampling methods are described herein.

7.1 Characterization Plans

The *Health and Safety Plan* for the site characterization and *Quality Assurance / Quality Control Plan* are available to the PADEP upon request.

7.2 Geophysics

A geophysical survey was performed by THG Geophysics LTD. (THG) on June 1, 2016. Ground penetrating radar (GPR) was utilized for the geophysical survey. The entire property was surveyed to identify the possible presence and location of historic USTs and subsurface utilities. The geophysical survey identified several utility lines and the existing UST. No undocumented USTs were identified during the survey. Refer to **Appendix F** for a copy of the geophysical report.

7.3 Soil Borings and Soil Sampling

Between June and September 2016, a combined total of 28 soil samples were obtained from 17 soil borings advanced on the subject property. Soil borings were advanced using direct push drilling methods to bedrock refusal with a Geoprobe®. Soil encountered within the borings was logged using the Unified Soil Classification System (USCS) and consisted of up to three (3) feet of fill material followed by intervals of sandy clay, silty clay, and sand. Competent bedrock was encountered between 11 and 22 feet below ground surface (bgs) as interpreted from direct push and hollow stem auger refusal. Saturation was identified in five (5) of the 17 soil borings (SB-4, SB-7, SB-12, SB-13, and SB-14) at depths ranging between eight and 13 feet bgs.

7.3 Soil Borings and Soil Sampling (Continued)

Soil cores were visually examined and scanned with a photoionization detector (PID) utilizing the headspace method. For vertical delineation, two (2) to three (3) soil samples were obtained from soil borings that exhibited elevated PID readings; one (1) soil sample from the area of the highest PID reading and one (1) soil sample from the interval above and/or below the highest PID reading. In soil borings where no PID readings were identified, one (1) soil sample was collected from either the unsaturated interval above the soil/groundwater interface or the unsaturated interval above the overburden/bedrock interval.

Note: further interpretation is made that some of the soil samples collected represent unsaturated conditions at the time of sampling however are considered periodically saturated based on water levels in wells.

The soil samples were collected using dedicated, disposable approximate 5-gram soil samplers and placed in new laboratory bottle ware with the appropriate preservative. Samples were stored in an ice filled cooler during transport to Mountain Research's PADEP accredited laboratory (PADEP #07-00418) using proper chain of custody methodology. Soil samples were analyzed for site COCs via United States Environmental Protection Agency (EPA) method 8260B including: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, MTBE, cumene, and naphthalene.

Upon completion of soil sampling activities, soil borings SB-1, SB-4, SB-8, SB-9, SB-11, SB-12, SB-13, and SB-14 were converted to monitoring wells MW-3, MW-1, MW-4, MW-8, MW-2, MW-5, MW-6 and MW-7, respectively. Soil boring locations are illustrated on **Figure 5**. Boring lithologic logs are included within **Appendix G**. Analytical results are discussed in **Section 9.0** of this report.

7.3.1 Geotechnical Soil Sampling

To aid in overburden aquifer fate and transport analysis/modeling, one (1) soil sample was collected for geotechnical analysis. The sample was collected from soil boring SB-1 and analyzed for bulk density, effective porosity, specific gravity, and fraction of organic carbon (FOC). It is noted that SB-1 is representative of non-petroleum impacted media and therefore FOC represents background levels. Analytical results are discussed in **Section 9.0** of this report.

7.4 Monitoring Wells

Eight (8) overburden monitoring wells (MW-1 through MW-8) were installed on the subject property between June and September 2016 using hollow stem auger rig drilling techniques. The 2-inch diameter wells range in depth from 11 to 23.5 feet bgs.

7.4 Monitoring Wells (Continued)

Following installation of the monitoring wells, each new monitoring well was properly developed. Purge water temporarily drummed and later properly disposed off site. The gradient direction of the overburden wells in relation to the source area (dispensers) can be summarized as follows:

- MW-1 is located downgradient and south of the dispensers
- MW-2 is located upgradient and north of the dispensers
- MW-3 is located downgradient and southwest of the dispensers
- MW-4 is located upgradient and north of the dispensers
- MW-5 is located downgradient and southwest of the dispensers
- MW-6 is located lateral and west of the dispensers
- MW-7 is located upgradient and northwest of the dispensers
- MW-8 is located upgradient and northeast of the dispensers

The locations of the monitoring wells are illustrated on **Figure 3**. **Table 1** summarizes the installation dates and monitoring well construction details. Well construction and lithologic logs are contained in **Appendix G.** Descriptions of drilling methods, lithological logging and soil screening are described in **Appendix E**.

It is noted that bedrock monitoring wells were being installed at the same time this report was being submitted, therefore specific information pertaining to the locations and construction details of the bedrock wells was not available at the time of report submittal.

7.5 Aquifer Testing

Rising and falling head slug tests were performed by Mountain Research in September 2016 on monitoring wells MW-2, MW-3, MW-4, MW-6, and MW-7. During each slug test water level measurements were recorded with an In-Site Level Troll 300 to record changing water levels over time.

The data gathered from each slug test was programmed into AQTESOLV for Windows (Version 3.5), along with individual monitoring well information to calculate aquifer characteristics via the Bouwer and Rice Method (Bouwer and Rice, 1976). Refer to **Appendix E** for the slug test methods description and **Appendix H** for the slug test analyses.

7.6 Site Survey

In July 2016, the subject property was surveyed by PA licensed surveyors from CME Engineering LP. CME's survey included site boundaries, infrastructure, utilities, the stream point, and the location and elevation of site monitoring wells and soil borings.

7.7 Characterization of Waste

Excess soil produced during the advancement of soil borings and monitoring well installation activities was staged in 55-gallon steel drums on the subject property prior to being disposed of at a proper facility. In addition, all purge water produced during the development and sampling of site monitoring wells was staged in 55-gallon steel drums prior to being disposed at a proper facility. Waste disposal certificates for soil and groundwater are presented in **Appendix I**.

8.0 SITE GEOLOGY

The site is located within the Allegheny Mountain Section of the Appalachian Plateau Physiographic Province. According to published geologic data, underlying bedrock at the site is classified as the Pennsylvanian Age Glenshaw Formation. The Glenshaw Formation consists of a heterogeneous unit composed predominantly of alternating layers of shale, sandstone, siltstone, limestone, claystone (including underclay) and coal. Thickness of the formation ranges approximately from 280 to 375 feet. The rocks are well bedded in most places. Thickness of beds varies with lithology, ranging from a fraction of an inch to several feet. Sandstone is thick-bedded to massive; limestone varies from well-bedded to nodular; shale is thin and fissile; and claystone is very poorly bedded. Jointing in the Glenshaw Formation is poorly to moderately well-developed, moderately distributed, closely to moderately spaced, and open to vertical. Subsidence fractures may be encountered where underground coal and clay mining has occurred. The primary porosity of the sandstone layers is generally moderate. A secondary porosity is provided by jointing in the other lithologies. Sandstone bedrock was encountered at depths ranging from 11 to 22 feet bgs during drilling activities.

Structurally, the site lies between the northeast to southwest trending Chestnut Ridge Anticline and the Latrobe Syncline. The anticline is located to the southeast and the syncline is located to the northwest of the Site, therefore bedrock dip is approximated in a northwest direction. Refer to **Figure 6** for a copy of the geologic map which depicts the subject property.

Review of Pennsylvania Mine Map Atlas resource (**Appendix J**) concerning historical underground mining yielded information pertaining to deep mining operations under the site. The Lucerne Ernest "E" Seam Mine is identified to contain room and pillar mining features directly under the site. This mine is listed as abandoned and within the Upper Freeport Coal. The Upper Freeport Coal is estimated to be approximately 100 feet below the surface elevation of the site based on formation mapping (Upper Freeport is located at Glenshaw and Allegheny Formation contact), site elevation, and considering an approximate northwest bedrock dip.

8.1 Soil

According to the United States Department of Agriculture (USDA), native soils at the property consist of Brinkerton silt loam, three to eight percent (3-8%) slopes (BkB) and Rayne-Gilpin channery silt loams, eight to twenty-five percent (8-25%) slopes, very stony (RsD). Soil encountered during drilling activities consisted of fill material followed by intervals of sandy clay, silty clay, and clay to depths of 11 to 22 feet bgs. Saturation was noted between 8 (eight) and 13 feet bgs. Refer to **Appendix G** for lithologic logs. A cross section location map, and cross sections A-A' and B-B' are included as **Figures 7** through **9**, respectively.

8.2 Bedrock Surface Elevation Mapping

The bedrock surface becomes more shallow in north eastern direction directly north of the UST and to a lesser degree on southern and western portions of the site. A bedrock surface elevation contour map is created to better understand the influence bedrock surface features may have on groundwater flow.

The bedrock elevation at soil boring and monitoring well locations is determined through surface elevations and the depth to refusal of direct push or auger drilling. In addition, the owner of the property was interviewed to determine if bedrock was encountered when installing the UST. He did not recall encountering bedrock.

Refer to **Figure 10** for the bedrock surface elevation contour map. The map depicts a bedrock depression in the area starting near the UST and trending toward and under the site building. In addition, an overall bedrock elevation grade in a northwest direction may be observed. This bedrock elevation grade is approximately in the same direction as regional bedrock dip.

A more complete interpretation of this feature may be made through additional soil boring or well installation as additional characterization data is obtained.

8.3 Hydrogeology

The closest surface water body to the site is an unnamed tributary headwaters to Yellow Creek located approximately 290 feet west/northwest of the release site (**Figure 3**). This tributary is diverted into underground conduits as part of a storm water system near the property. An impoundment or pond is noted to be constructed upgradeint of the site at the beginning of the drainage basin for this stream.

Surface drainage follows site topography toward the west where it enters a subsurface storm water system on the western portion of the subject property. This drainage is then diverted to the above mentioned storm water system which runs to retention basins located southwest of Lucerne Road.

Overburden soil saturation was encountered between eight (8) and 13 feet bgs during drilling activities. Based on data obtained from groundwater sampling events conducted in 2016, static water level measurements range between 6.36 feet below top of casing (btoc) at MW-6 and 11.03 feet btoc at MW-1. Based on the October 4 and October 31 groundwater gauging events of all wells and the stream point, the overburden groundwater gradient fluctuates from a southwestern to west-southwestern direction. The magnitude of the gradient varies from a magnitude of and 0.006 ft/ft (10/4/16 measured between MW-8 and MW-5) and 0.028 ft/ft (10/31/16 measured between MW-8 and MW-6) for an average of 0.017 ft/ft southwest gradient.

Static groundwater level measurements and groundwater elevations are summarized in **Table 2.** Overburden groundwater elevation contour maps for each monitoring well gauging event (including early events prior to installation of all monitoring wells) were constructed using the survey data and the static water levels and are included as **Figures 11 through 15**.

8.3 Hydrogeology (Continued)

Bedrock aquifer qualities are not outlined in this report. Bedrock aquifer wells are currently being constructed and sampled for future site characterization purposes. In addition to water quality, an evaluation of vertical gradients between overburden and bedrock aquifers will be evaluated to aid in determining the conceptual site model and qualitative fate and transport.

8.3.1 Aquifer Test Results

Time-displacement plots of rising and falling head slug test data from overburden monitoring wells MW-2, MW-3, MW-4, MW-6, and MW-7 were prepared for Bouwer and Rice Method best-fit line matching analysis. The slug test data gathered from each test was programmed into AQTESOLV for Windows (Version 3.5), along with individual monitoring well information to evaluate overburden aquifer characteristics.

Copies of the slug test data, corresponding displacement data, and displacement versus time graphs are presented in **Appendix H**. Overburden aquifer hydraulic conductivity values for the rising head slug tests are summarized in **Table 3**.

The Bouwer and Rice Method calculations yielded a geometric mean hydraulic conductivity value of **0.028 ft / day** for the **overburden** aquifer beneath the Site. Using the values of hydraulic conductivity (K) and an average aquifer thickness (b) of 6.9 feet, the calculated average transmissivity (T = Kb) is **0.6 ft^2 / day**.

9.0 ANALYTICAL RESULTS

Soil and groundwater samples were analyzed using EPA approved methods for the regulated substances related to the release of unleaded gasoline and diesel fuel including benzene, toluene, ethylbenzene, total xylenes, MTBE, cumene, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5 - trimethylbenzene by EPA Method 8260B. Analytical results of the soil and groundwater samples are presented in the following subsections.

9.1 Soil Sampling Analytical Results

Analytical results from the 28 soil samples collected from the 17 soil borings advanced on the subject property between June and September 2016 identified 1,2,4-trimethylbenzene (SB-6 and SB-9) and benzene (SB-3 and SB-9) at concentrations above their respective PADEP RUA soil to groundwater MSC. The aforementioned impacts were identified at depths ranging from eight (8) to 11 feet bgs and are interpreted to represent a periodically saturated soil within the zone of groundwater table fluctuations (smear zone). Concentrations of all other analyzed parameters were either below their respective PADEP RUA soil to groundwater MSC or below laboratory detection limits, which were set below each constituent's respective PADEP RUA soil to groundwater MSC. Refer to **Figure 5** for soil boring locations, **Table 4** for a summary of soil analytical results and **Appendix K** for laboratory data sheets.

9.1.1 Geotech Results

A geotechnical sample and fraction of organic carbon (FOC) soil samples were collected from MW-1(SB-4) at 11 feet bgs. Soil geotechnical analysis was completed by Geotechnical Testing Services of Coraopolis, PA. The sample displayed a dry soil bulk density value of 1.6 grams per cubic centimeter, a total porosity of 0.39 (unitless), and a specific gravity of 2.64 grams per cubic centimeter. FOC was analyzed by Mountain Research's Laboratory using ASTM D2974-00C. The soil FOC value was calculated at 2.42%. Refer to **Appendix L** for a copy of the Geotechnical Laboratory Analytical Report and FOC laboratory report. Refer to **Figure 5** for a site map illustrating the geotechnical soil sample location. It is noted that the FOC sample is obtained from a non-petroleum impacted location.

9.2 Groundwater

Since July 2016, Mountain Research has conducted two (2) groundwater sampling events on MW-1 through MW-4, one (1) groundwater sampling event on monitoring wells MW-5 through MW-8, and two (2) groundwater sampling event on the entire overburden monitoring well network (MW-1 through MW-8). Analytical results have identified the following constituents at concentrations above their respective PADEP RUA MSC; 1,2,4-trimethylbenzene (MW-8), benzene (MW-2, MW-4, MW-7, and MW-8), toluene (MW-8), and MTBE (MW-4). Concentrations of all remaining analyzed constituents were either below laboratory detection limits or below their respective PADEP RUA groundwater MSC limits (which were set below each constituent's respective PADEP RUA groundwater MSC) in all remaining analyzed monitoring wells.

Refer to **Appendix M** for laboratory analytical data sheets for groundwater samples collected by Mountain Research which are summarized in **Table 5.** Isoconcentration maps for constituents identified above their respective PADEP RUA groundwater MSC are included in **Appendix N**.

10.0 VAPOR INTRUSION INTO BUILDINGS

An assessment was performed to qualitatively evaluate the likelihood of current or future vapor intrusion concerns. In January, 2004, the PADEP adopted the *Final Draft Guidance on Vapor Intrusion into Buildings from Groundwater and Soil Under the Act 2 Statewide Health Standard, July 29, 2003* (guidance document). This document provides guidance for evaluating the potential for and risks of vapors from soil and/or groundwater impacted by volatile organic compounds. It is noted that new guidance is expected to be published within a short time after the submittal of this SCR. The soil and groundwater analytical data and general knowledge of site features and conditions were incorporated into a conceptualized site model for the purpose of identifying complete vapor intrusion exposure pathways at the site.

10.1 Volatile Source Identification

10.1.1 Soil

Detectable concentrations of petroleum constituents were identified in soil samples obtained from soil borings at depths ranging between six (6) and 18.5 feet bgs.

10.1.2 Groundwater

Petroleum constituents were identified at detectable concentrations in groundwater samples obtained from overburden monitoring wells MW-1 though MW-4 and MW-6 through MW-8. Average depth to water in these wells is 9.08 feet btoc.

10.2 Building Receptors

Building receptors proximate to the site include the structure on the subject property.

10.3 Potential Preferential Pathways

The VIB guidance document generally defines an exposure pathway as the course a regulated substance(s) takes from the source area(s) to a species of concern. Potential preferential pathways listed in the document include "shallow rock or vertically fractured soil, or manmade (eg., buried utilities) features that create a sufficiently direct pathway from a source to a receptor". Pathways must pass through or within 30 feet of a source to constitute a preferred pathway.

10.3.1 Soil Composition

Subsurface material consists of up to three (3) feet of fill material (consisting mainly of clay) followed by intervals of sandy clay, silty clay, and sand. The fill and soil are all interpreted to be soil like material and do not pose a preferential pathway.

10.3.2 Underground Utility Investigation

Bedding material used in the construction of buried utility lines may serve as preferential pathways for vapor migration. Underground utilities that serve the site include municipal electric, sanitary sewer, natural gas, municipal water, and storm sewer. In addition, fill material is assumed to be located within the UST field and around the product delivery lines leading from the UST field to the dispensers.

Any underground utility intersecting petroleum impacted media or passing within 30 feet of petroleum impacted media is considered a preferential pathway. Utilities at and around the site located within 30 lateral feet of soil and/or groundwater impacted with petroleum constituents at detectable concentrations include sanitary sewer, water, underground electric lines, and product delivery lines which may act as a preferential pathway for vapor migration. Refer to **Figure 4** for the approximate locations of underground utilities.

10.3.3 Bedrock Characteristics

Bedrock was encountered between 11 and 22 feet bgs during drilling activities. Due to the depth to bedrock, bedrock in not considered a potential preferential pathway for vapor migration currently or in the future.

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10.4 Vapor Inhalation Screening

Potential vapor exposure (inhalation) pathways relating to concentrations of constituents identified in soil and groundwater were evaluated. The maximum constituent concentration in on-site soil and groundwater were compared to residential default screening values calculated using Pennsylvania-specific parameters and the Johnson and Ettinger (J&E) vapor intrusion model. Results of the evaluation are presented in the following subsections.

10.4.1 Soil Vapor Inhalation

The inhalation of soil vapors potentially generated from adsorbed phase soil concentrations on the property was evaluated. The highest concentration of each detectable constituent in soil was compared to its respective PA Default Residential Volatilization to Indoor Air Screening Value (**Table 6**). Based on the comparison, concentrations of 1,2,4-trimethylbenzene, benzene, and ethylbenzene exceed their respective screening value. Based on the aforementioned exceedances and the identification of potential preferential pathways, additional evaluation of soil vapor conditions is warranted.

10.4.2 Groundwater Vapor Inhalation

The inhalation of soil vapors potentially generated from dissolved phase groundwater impacts on the property was evaluated. The highest concentration of each detectable constituent in groundwater was compared to its respective PA Default Residential Volatilization to Indoor Air Screening Value (**Table 7**). Based on the comparison, none of the detected constituents exceed their respective screening value. However, because potential preferential pathways were identified, additional evaluation of soil vapor conditions is warranted.

10.5 Soil Vapor Evaluation Conclusion

Based on the identification of preferential pathways and results of vapor inhalation screening, additional evaluation of soil vapor is warranted. Because it is anticipated that new vapor intrusion guidance will be released in the very near future quantitative evaluation of soil vapor conditions will be conducted using this new guidance.

Soil Vapor quantification will be conducted for the source area and evaluated within the sub-slab of the building basement. The soil vapor results will be updated to the PADEP in subsequential reporting.

11.0 SITE CONCEPTUAL MODEL

Soil and groundwater analytical results indicate that petroleum hydrocarbon constituents typically associated with a release of diesel fuel and/or unleaded gasoline are present at detectable concentrations above and below the current PADEP RUA MSCs. The nature and extent of the petroleum release(s) and potential migration pathways were evaluated through the comparison of the soil and groundwater analytical data in relation to site features and the geologic and hydrogeologic settings of the facility. The conceptual site model developed from the evaluation is discussed in the following sections.

11.1 Aquifer System

Based on lithologic logs and measured groundwater elevations in wells, overburden soil depth ranges from 11 to 22 feet bgs with saturation occurring approximately between seven (7) and 13 feet bgs. According to soil boring/monitoring well logs, overburden materials consist of up to three (3) feet of clay fill material followed by intervals of sandy clay, silty clay, and sand. Static water levels within the overburden range from 6.36 feet btoc at MW-6 to 11.03 feet btoc at MW-1. Groundwater gradient at the site is toward the southwest. Groundwater elevation contour maps are included as **Figures 11 through 15**. Refer to **Figure 7** for a cross section location map and **Figures 8** and **9** for cross sections A-A' and B-B'.

11.2 Source Area and COCs

The source of the release identified in the investigation was a failed fitting on the diesel dispenser. Once the failure was identified (in September 2015), Mr. Vennard repaired the fitting and restored the integrity of the dispenser. Because MTBE has been identified at detectable concentrations in groundwater and the use of MTBE was banned in 2006, it is interpreted that the release occurred prior to the restriction of MTBE use and was chronic in nature. The volume of released product is unknown.

It is noted that the observation of NAPL in tank field monitoring points may suggest that other unidentified sources from the UST and UST system may be contributing to the impacts of the site.

The following constituents are identified as the COCs in the listed media:

Groundwater: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, MTBE, cumene, and naphthalene.

Soil: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, total xylenes, cumene, and naphthalene.

11.3 Preferential Pathways

Preferential pathways for overburden groundwater flow may include underground utilities, fill material used in site development, and bedrock/overburden surface.

11.3.1 Utility Preferential Pathways

The product lines connecting the UST to the dispensers are identified as a preferential pathway for the migration of product emanating from dispensers. Any product leaking from the dispenser system could potentially follow the porous fill material used to fill the excavation surrounding the product lines connecting the UST with the dispensers. The grade of the piping system is estimated to be downward between the dispensers and the UST potentially creating a migration pathway from the dispensers toward the UST. NAPL identified in the UST field monitoring point/former sump and MW-8 impacts near the UST are interpreted to potentially be attributed to this migration.

11.3.1 Utility Preferential Pathways (Continued)

The underground sewer line located near the northern property boundary runs in a northeast to southwest direction. The depth to this utility is estimated to be greater than 5 feet below the surface. This utility may intersect overburden groundwater and create a preferential pathway for migration in a southwestern direction along its path. No other utilities within the impacted media portion of the site are identified to be deep enough to cause preferential migration of groundwater.

As outlined in previous sections, vapor eminating from impacted media may preferentially migrate along several underground utilities which connect to the site building, thus creating a vapor intrusion into building concern. These utilities include the UST vapor lines and UST electrical lines.

11.3.2 Fill Preferential Pathway

The owner of the property has stated that fill material has been used to aid in bringing the site to current grade. This fill material may create a preferential pathway within the fill or at the boundary of the fill and natural soil. The fill material is not identified in drilling logs to be significantly different than the native material and therefore is not considered a preferential pathway.

In addition to the fill material used to bring the site to grade, porous fill material surrounding the UST system may act as preferential pathway for contaminated groundwater where saturated. The UST is estimated to be installed to a depth of 15 feet below surface. Overburden groundwater within this excavation may migrate in all directions around the UST to the extent of the excavation due to the porous fill material. NAPL identified in a monitoring point within the UST field supports this migration pathway.

11.3.3 Bedrock Interface Preferential Pathway

The bedrock surface becomes more shallow in north eastern direction directly north of the UST and to a lesser degree on southern and western portions of the site. A bedrock surface elevation contour map was created to better understand the influence bedrock surface features may have on groundwater flow. The bedrock surface is interpreted from direct push or auger drilling refusal and site survey. Refer to **Figure 10** for the bedrock surface elevation contour map. The map depicts a bedrock depression in the area starting near the UST and trending toward and under the site building. Impacted groundwater migration may be influenced by this bedrock surface feature causing impacted water to remain within the bedrock surface depression possibly acting as a recharge area for bedrock. A more complete interpretation of this feature may be made through additional soil borings and well installation interpretations.

11.4 Conceptual COC Migration Groundwater Flow

A release is identified to have occurred in the central portion of the subject property (pump island). Once the released product entered the subsurface, it is interpreted to have migrated vertically downward and laterally in a northern direction, possibly along the product delivery lines, to the UST field. Along this migration path the product is interpreted to have sorbed to unsaturated soil as observed with petroleum impacts to soil borings samples SB-3 (8') and SB-6 (6'). As the petroleum product migrated downward it would come in contact with groundwater at which point it may dissolve and be present in groundwater as dissolved phase impacts. In addition, the portion of the product that does not dissolve may exist as NAPL on the surface of the groundwater. Evidence of groundwater impacts between the dispenser source and UST is observed in MW-4.

Groundwater impacted with dissolved phase impacts and/or NAPL may impact soil through further sorbtion of petroleum COCs. Proof of soil impacts near the unsaturated/saturated soil boundary (smear zone) and deeper is present in soil boring samples SB-3 (12'), SB-6 (11), SB-7 (13'), SB-8 (10'), SB-9 (9.5' & 10.5'), indicating this process has occurred in periodically saturated and saturated soils.

Once in the UST field, product dispersed through the fill material and encountered overburden groundwater. Once in dissolved phase, impacts migrated in north, northeast, and northwestern directions through diffusion.

Observations of impacts in MW-8, which is interpreted to be located upgradeint from the source are interpreted to have migrated through diffusion in the fill material around the UST.

Dissolved phase impacts identified in MW-2 and MW-7 are interpreted to have in part migrated preferentially along the sanitary sewer line in southwest direction. The groundwater gradient is observed to also follow this direction in some groundwater elevation contour map interpretations. The impacts in MW-2 and MW-7 are interpreted to be evidence of both preferential flow and of advective transport along groundwater gradient.

Overall overburden groundwater migration appears to be dependant both upon groundwater gradient and preferential pathways. The impacts in MW-4 may be attributed to groundwater flow along gradient or as a direct source area from dispenser leaks following preferential pathways. Dissolved impacts in MW-2 and MW-7 are attributed to both groundwater advective transport and preferential pathway transport.

If a potential UST source in addition to the dispenser source are considered the conceptual model may be simplified to a source area near the UST which migrates advectively with gradient and preferentially with the sanitary sewer line. In addition, diffusion of groundwater impacts near the UST occur due to the porous fill material used to install the UST.

12.0 PETROLEUM IMPACTED GROUNDWATER FATE AND TRANSPORT MODELING

Because 1,2,4-trimethylbenzene and benzene have been consistently identified in overburden groundwater at concentrations above their respective PADEP RUA groundwater MSC, a quantitative fate and transport model was produced for these constituents. MTBE and toluene were not modeled because it has only been identified above their respective MSC one (1) time since the commencement of groundwater sampling. Fate and transport modeling will be updated as necessary in future reports.

12.1 Computer Model and Description

The model chosen for the quantification of 1,2,4-trimethylbenzene and benzene was the New Quick Domenico (QD) model, a Microsoft Excel spreadsheet application of *An Analytical Model For Multidimensional Transport of a Decaying Contaminant Species*, by P.A. Domenico, Journal of Hydrology, 91 (1987), pp 49-58. The *PADEP User's Manual for the Quick Domenico Groundwater Fate and Transport Manual, February 2014* was followed for setup of the models.

The QD model calculates concentrations of organic substances at any point and time downgradient of a source area of known size and concentration. The model allows for first order decay, retardation and three dimensional dispersion. This model is intended for dissolved organic constituents whose fate and transport can be described or influenced by first order decay and reaction with organic carbon in the soil. Site-specific data and published chemical properties of site COCs were used to construct and calibrate the empirical predictive simulation.

12.2 Input Parameters and Calibration / Sensitivity and Analysis

The QD spreadsheet allows for the use of a single source concentration which is applied across the entire width and thickness of the source area perpendicular to groundwater flow. The spreadsheet assumes that the source area concentration is continuous, therefore QD is inherently conservative.

1,2,4-trimethylbenzene and benzene have been identified at concentrations above their respective PADEP RUA groundwater MSC in monitoring wells MW-2, MW-4, MW-7, and/or MW-8 with the highest concentrations of these constituents identified in MW-8. Therefore MW-8 was used as the source well in the models. Because two (2) potential migration flow paths have been identified for benzene, two (2) models were produced for this constituent. Refer to **Figure 16** for an illustration of the plume centerlines, the shape of the dissolved phase 1,2,4-trimethylbenzene and benzene plumes (planiforms), and the calibration points used in each model.

12.2 Input Parameters and Calibration / Sensitivity and Analysis (Continued)

The calibration wells, source concentration values and calibration well concentration values used in each model include the following obtained from the 10/4/2016 sampling event:

Constituent	Source Well and Concentration	Calibration Well and Concentration	Calibration Well and Concentration
1,2,4-Trimethylbenzene	MW-8 (440 µg/L)	MW-7 (1 µg/L)	NA
Benzene Scenario 1	MW-8 (90.9 µg/L)	MW-7 (18.9 µg/L)	MW-6 (3.44 µg/L)
Benzene Scenario 2	MW-8 (90.9 µg/L)	MW-4 (57 µg/L)	MW-5 (1 µg/L)

When using the QD spreadsheet, site-specific and PADEP default baseline parameters were utilized as a first step in model set up. A calibration model parameter range evaluation was established to explore the range of model simulation outputs for sensitive parameters. Three (3) sensitive parameters (hydraulic conductivity, longitudinal dispersivity, and degradation coefficient) were evaluated through nine (9) models having changes of 10x and 1/10x values of the baseline parameters for hydraulic conductivity and longitudinal dispersivity.

The models were calibrated using changes in degradation coefficient. The models that were able to be calibrated were then used to determine the furthest distance of the petroleum plume migration to a SHS value. This information was then used to determine which model represented the most conservative projection.

Presented in **Appendix O** is an evaluation table and a second table explaining all input parameters (initial and final) and a sensitivity evaluation.

12.3 Fate and Transport Summary and Conclusions

The fate and transport of 1,2,4-trimethylbenzene and benzene in the overburden aquifer was modeled through use of the New QD groundwater modeling program. Simulations were calibrated to existing conditions for 1,2,4-trimethylbenzene and benzene within monitoring wells MW-4 through MW-8 in the overburden aquifer.

Once input parameters were calibrated, 5, 10, 15, 20, 25, and 30 year predictive simulations were completed for each model. The results from each predictive simulation are illustrated on **Figure 17**. The model results are included as **Appendix P** and are summarized below:

1,2,4-Trimethylbenzene (MW-8 to MW-7)

The results of the 30 year worst case predictive simulation indicates that 1,2,4-trimethylbenzene would migrate 52 feet from MW-8 in a western direction toward MW-7 before attenuating to the PADEP RUA groundwater MSC (15 µg/L). 1,2,4-trimethylbenzene is not predicted to migrate beyond the subject property's western property boundary at concentrations above the current MSC over the next 30 years. Refer to **Appendix P** and **Figure 17** for the QD model results.

12.3 Fate and Transport Summary and Conclusions (Continued)

Benzene Scenario 1 (MW-8 to MW-7 to MW-6)

The results of the 30 year worst case predictive simulation indicates that benzene would migrate 182 feet in a western direction from MW-8 before attenuating to the PADEP RUA groundwater MSC (5 µg/L). Over the next 30 years, benzene is predicted to migrate approximately 12 feet beyond the subject property's western property boundary before attenuating to the current MSC. Refer to **Appendix P** and **Figure 17** for the QD model results.

Benzene Scenario 1 (MW-8 to MW-4 to MW-5)

The results of the 30 year worst case predictive simulation indicates that benzene would migrate 105 feet from MW-8 in a southwestern direction toward MW-5 before attenuating to the PADEP RUA groundwater MSC (5 µg/L). Benzene is not predicted to migrate beyond the subject property's western property boundary at concentrations above the current MSC over the next 30 years. Refer to **Appendix P** and **Figure 17** for the QD model results.

13.0 ECOLOGICAL RECEPTOR EVALUATION

Guidance under PA code Title 25 §250.311(a) (1-4) (Evaluation of Ecological Receptors) was followed for the purpose of assessing potential impacts to the following ecological receptors:

- Individuals of threatened or endangered species as designated by the United States Fish and Wildlife Service under the Endangered Species Act (16 U.S.C.A. § § 1531—1544).
- Exceptional value wetlands as defined in PA Code Title 25 § 105.17 (relating to wetlands).
- Habitats of concern.
- Species of concern.

The entire site or area of concern based upon site characterization was considered in the assessment. The Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Tool was used to assess the occurrence of threatened or endangered species, habitats of concern, and species of concern. In addition, the US Fish and Wildlife Service (USFWS) National Wetlands Inventory Mapper was used to evaluate if significant wetlands were delineated within the site boundaries.

The results of the PNDI review indicate no known impact from any of the four (4) agencies data bases including PA Game Commission, PA Department of Conservation and Natural Resources, PA Fish and Boat Commission, and USFWS. Review of the USFWS National Wetlands Inventory Mapper yielded no known wetlands near or within the site. A copy of the PNDI Environmental Review Receipt and a print of the Wetlands Inventory Map are included for reference as **Appendix Q**. Based on the results of these two (2) resources, no ecological receptors as listed above are located near or within the boundaries of the subject property.

In addition, the COC identified at the site are classified as light petroleum products which include unleaded gasoline and diesel. Based on PA code Title 25 §250.311(b) (1), an evaluation of ecological receptors is not required for sites containing petroleum impacts.

13.0 ECOLOGICAL RECEPTOR EVALUATION (Continued)

Finally, there are no habitats that currently exist at the source property since the almost the entire site is covered with impermeable surfaces.

Due to the lack of characterized ecological receptors and the nature of the COC, no further ecological evaluation was deemed necessary.

14.0 CHARACTERIZATION OBJECTIVES

The following site characterization objectives were developed for site characterization:

- Identify the extent of impacted groundwater.
- Identify the extent of impacted soil.
- Describe the study area geology, hydrogeology, aquifer characteristics, and physical parameters such that a remediation standard and strategy for the site can be selected.
- Develop a site conceptual model from which the fate and transport of constituents can be evaluated by modeling or analysis.
- Evaluate potential VIB risks.

14.1 Characterization Conclusions

Based on site characterization activities, the following conclusions have been made:

- Physical and olfactory evidence of a petroleum release identified during Phase 2 activities conducted in September 2015 prompted Site Characterization activities.

- Overburden aquifer has been identified at the site. Groundwater gradient within the overburden is toward southwest. Additional site characterization activities are warranted to evaluate the potential bedrock aquifer.

- Analytical results for groundwater samples collected from overburden monitoring wells identified 1,2,4-trimethylbenzene, benzene, toluene, and MTBE at concentrations above their respective PADEP RUA groundwater MSC in monitoring wells MW-2, MW-4, MW-7, and/or MW-8. Concentrations of all remaining analyzed constituents were either below laboratory detection limits or below their respective PADEP RUA groundwater MSC in all other analyzed overburden monitoring wells. Additional site characterization activities are warranted to determine if bedrock groundwater is impacted with petroleum constituents.

- Additional site characterization activities are warranted to quantitatively evaluate soil vapor conditions at the site.

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14.1 Characterization Conclusions (Continued)

- Fate and transport modeling indicates benzene in overburden groundwater will migrate beyond the subject property's western property boundary at concentrations above the current PADEP RUA groundwater MSC within the next 30 years. 1,2,4-trimethylbenzene is not predicted to migrate beyond the subject property's western boundary at concentrations above the current PADEP RUA groundwater MSC over the next 30 years.

- The proposed remedial strategy for the property is the statewide health standard (SHS) for soil and groundwater in a residential setting.

14.2 Description of Further Site Characterization Needed

Based on the identification of preferential pathways, the potential for vapor intrusion into current and / or future buildings is a concern that warrants quantitative evaluation. To address this issue, Mountain Research proposes the installation of three (3) soil vapor points on the subject property. To evaluate the potential for vapor migration, one (1) soil vapor point is proposed to be installed between the source area (dispenser) and the current building, one (1) soil vapor point will be installed near MW-8 to represent source area concentrations, and one sub-slab point will be installed in the basement floor of the building. The exact number and locations of the vapor sampling points will be discussed with the PADEP project officer to ensure they meet newer vapor intrusion guidance. Two rounds of soil vapor sampling will be completed at each soil vapor point and analyzed for the post-March 2008 short list of unleaded gasoline compounds. The locations of the proposed soil vapor points are depicted on **Figure 18**.

Overburden aquifer dissolved impacts are not fully defined in the area upgradient of the source area and north lateral of the source area. The current interpretation of migration pathways is that these two areas are not impacted. Two overburden monitoring wells will be installed to address this delineation. One overburden well will be installed near the northwestern site property corner. In addition, off-site access will be negotiated with the property that adjoins the northern property boundary of the site. One overburden monitoring well will be installed approximately 25 feet north of the site property boundary near MW-7.

The potential for the overburden groundwater impacts to migrate to bedrock aquifer is acknowledged. At the time of this report submittal bedrock aquifer wells are being installed. The new wells will be developed, surveyed, and sampled two times. A summary of the data gathered from these new wells and updated conceptual model will be submitted to the PADEP in the form of a SCR addendum.

15.0 REMEDIAL ACTION OPTIONS

The following technologies were considered for this site:

- Soil Excavation
- *Groundwater extraction*
- *Enhanced bioremediation*
- *Dual Phase Extraction (DPE) or Soil Vapor Extraction (SVE)*
- *Monitored Natural Attenuation*
- *Air sparging/SVE*
- *Risk Based closure having limited active remediation*

Although each of the technologies could be applied to the site, several technologies were considered inappropriate. The following is an evaluation of each technique.

Soil Excavation

Soil excavation involves the removal of impacted soils from the site. The excavated soils are disposed of at proper facility and the excavated area is backfilled with clean fill material. Impacted soil exists in the vicinity of the dispensers and the UST field. The extent of soil contamination is fully delineated and identified to be primarily located near the unsaturated/saturated soil interface. Although soil excavation may be conducted at the site, soil excavation is not considered to be a viable remedial option for the site. Limitations with excavating near the locations of site infrastructure in the vicinity of the soil impacts (dispenser canopy and the location of the product delivery lines) and the difficulties with removing potentially saturated soils.

Groundwater Extraction / Vacuum Enhanced Groundwater Extraction

Groundwater extraction and treatment involves the removal of impacted groundwater through mechanical pumping to a surface treatment system. The impacted water is treated to remove site constituents of concern and either discharged under permit to surface, sanitary sewer system, or reinjected into the ground.

Initial capital costs are low, and based on the relatively low constituent concentrations in overburden groundwater, reaching remedial goals using this method would be possible. However, this technology alone will not remediate the soil source area which in turn would continue to impact groundwater. In addition, the low water yielding qualities of the overburden may limit the quantity of groundwater that may be removed through using pumping without enhancement.

Vacuum enhanced groundwater extraction utilizes an applied vacuum on the extraction well to increase the yield of the well. An evaluation of this method will be completed to determine if groundwater extraction rates may economically be increased.

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15.0 REMEDIAL ACTION OPTIONS (Continued)

Enhanced Bioremediation

In-situ bioremediation requires the extraction of groundwater and injection of augmented water into an aquifer.

Enhanced bioremediation essentially builds upon extraction and treatment by reinjecting the extracted / treated water after adding nutrients, bacteria and dissolved oxygen. This process enhances the remediation by promoting in-situ bacteria degradation of constituents of concern both in dissolved and sorbed phases. The objective is to significantly shorten the operation and maintenance period of an extraction and treatment only system. The added cost of the bioenhancement can be offset by shorter operation time of the system, and can result in overall remedial savings.

Because of the limited water yielding capabilities of the overburden source area, this technology will be greatly limited and is not considered a viable option for the treatment of the overburden.

Dual Phase Extraction or Soil Vapor Extraction

Dual phase extraction is a process that includes extracting both groundwater and soil vapor continuously from an aquifer. Groundwater extraction through either vacuum drop tubes or submersible pumps is enhanced by a pressure gradient created by a vacuum placed on the well head. In addition to groundwater extraction the vacuum on the well is used to remove petroleum impacts from soil and groundwater by stripping petroleum vapors from these media. Dual phase extraction is best suited for aquifers with low groundwater yield to increase groundwater recovery rates. In addition, soil petroleum impact mass is removed from soils at the same time via the vacuum system.

Where unsaturated soils are the only media of concern Soil Vapor Extraction (SVE) may be employed in a similar manner. A vacuum is place on the well head of a well screened through impacted unsaturated soils. The vacuum strips sorbed phase VOCs from the soils and extracts them in vapor phase to the surface where the vapors are treated and discharged to the atmosphere.

Capital costs are high for this type of system but may off-set the time to reach remedial goals, especially if compared with conventional groundwater extraction. Because of the periodically saturated nature of the impacted soils duel phase extraction technology may be considered a remedial option for the site overburden. A feasibility study is required to determine the effectiveness and design parameters for this type of remedial technology. This technology is best employed when direct removal of the source is not possible. Because site conditions are not favorable for soil excavation and disposal, duel phase extraction technology is a viable remedial option for the site.

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15.0 REMEDIAL ACTION OPTIONS (Continued)

Monitored Natural Attenuation (MNA)
Monitored natural attenuation includes the evaluation of potential degradation factors and indicators in an aquifer such as plume stability, oxygen reduction potential, and the presence of petroleum degrading bacteria. MNA is only viable when no source area is present or only a minor source remains. MNA can be considered only after the source area soil and groundwater is removed. Because the source still exists MNA is not considered at this initial phase of remediation. MNA may be considered in the future after the source area is significantly removed through other forms of remediation.

A pilot study / investigation including the evaluation of MNA potential for the bedrock aquifer is a suggested requirement prior to MNA remediation.

Air Sparging with SVE
Air sparging includes the injection of compressed air into wells that are located in contaminated areas and are screened below the water table. Air bubbles injected into these wells migrate outward through the aquifer and produce a mass transfer of sorbed and dissolved phase VOC impact into the vapor stream. As the vapor stream, containing VOC, travels toward the surface the vapors are then captured by a soil vapor extraction (SVE) system. Another effect of air sparging is an increase of dissolved oxygen within groundwater that may enhance the environment for petroleum degrading bacteria thus increasing aerobic biodegradation. This technology alone is not appropriate for remediation of unsaturated soils however the SVE used to capture the sparged vapor may be applied to remediated unsaturated soils.

Capital costs are high for this type of system but may off-set the time to reach remedial goals, especially if compared with conventional groundwater extraction. This type of remediation is applicable only if good capture by the SVE is possible thus limiting the sparged vapors from entering the site building.

Risk Based Closure
Risk based closure or site specific standard (SSS) includes the identification of soil and groundwater impacts and the current and future risks that the impacts may pose to human health and the environment. Once a risk exposure is identified, a receptor pathway of exposure may be eliminated through institutional or engineering controls. Institutional and engineering controls would be implemented by placing an activity use limitation in the form of an environmental covenant on the property deed that follows through to all property owners requiring controls to limit exposure pathways.

A risk based closure may be obtained in a relatively short period of time and with relatively less capital costs. Risk based closure is a viable option for remediation and would likely entail the elimination of groundwater extraction, restrictions on excavation activities, and soil vapor into building mitigation plans for future development. If groundwater impacts are modeled to migrate to off site locations, then those other properties may require environmental covenants.

15.0 REMEDIAL ACTION OPTIONS (Continued)

Risk Based Closure (Continued)
This form of remediation is currently not considered based on the remedial goals of the site owner.

It is recognized that the remedial action options presented above my need to be reevaluated after groundwater analytical results are available from the newly installed bedrock monitoring wells. If warranted, an updated evaluation of remedial options will be included within the SCR Addendum.

15.1 Remedial Action Option

A feasibility study will be conducted on the site to evaluate groundwater extraction, vapor enhanced groundwater extraction, duel phase extraction, soil vapor extraction, and air sparge. Based on the quantitative results and qualitative observations of the feasibility study one of these remedial technologies will be chosen. At this point, air sparge coupled with SVE is the remedial choice of preference, however good capture from SVE is required to be proven from the feasibility study to limit vapor intrusion concerns for the site building.

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REFERENCES

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- United States Department of Agriculture Web Soil Survey. Accessed November 2016. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>
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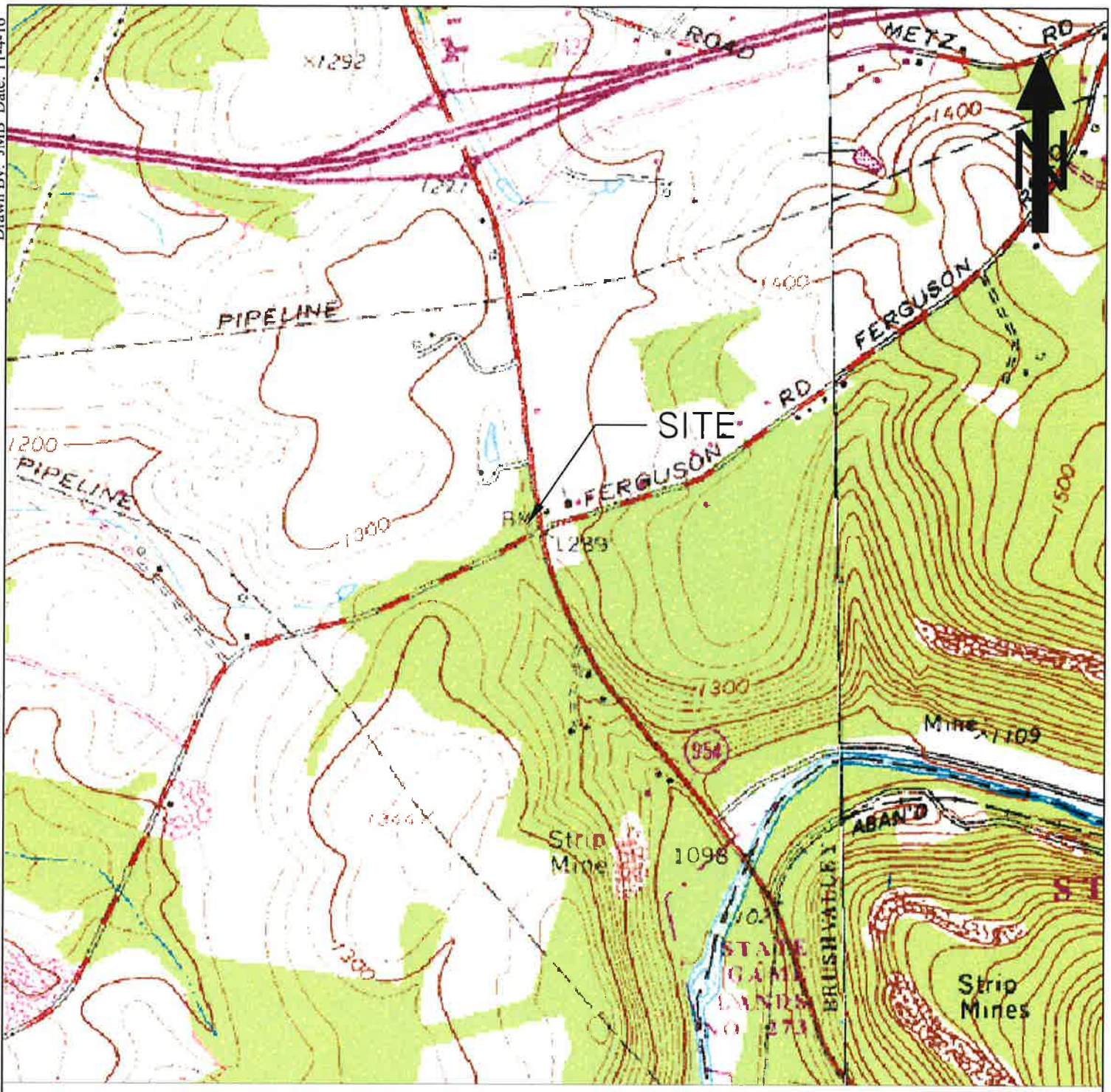
FIGURES

Drawn By: JMB Date: 11-4-16



Portion of the Indiana, PA U.S.G.S 7.5 Minute Topographic Quadrangle.

0 1/2 1 MILE

0 600 1,200 2,400 3,600 4,800 6,000 FEET

0 1/2 1 KILOMETER

1"=1,200'

Site Coordinates: (40°34'32.97"N & 79° 7'59.25"W)

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Vennard's

4985 Lucerne Road
Indiana, PA

SITE LOCATION MAP

Figure 1

H:\W\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\ FIGURES 2016\FIG 1 - SITE LOCATIN MAP.DWG

N
MAGNETIC

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H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 2 - AERIAL SITE MAP.DWG

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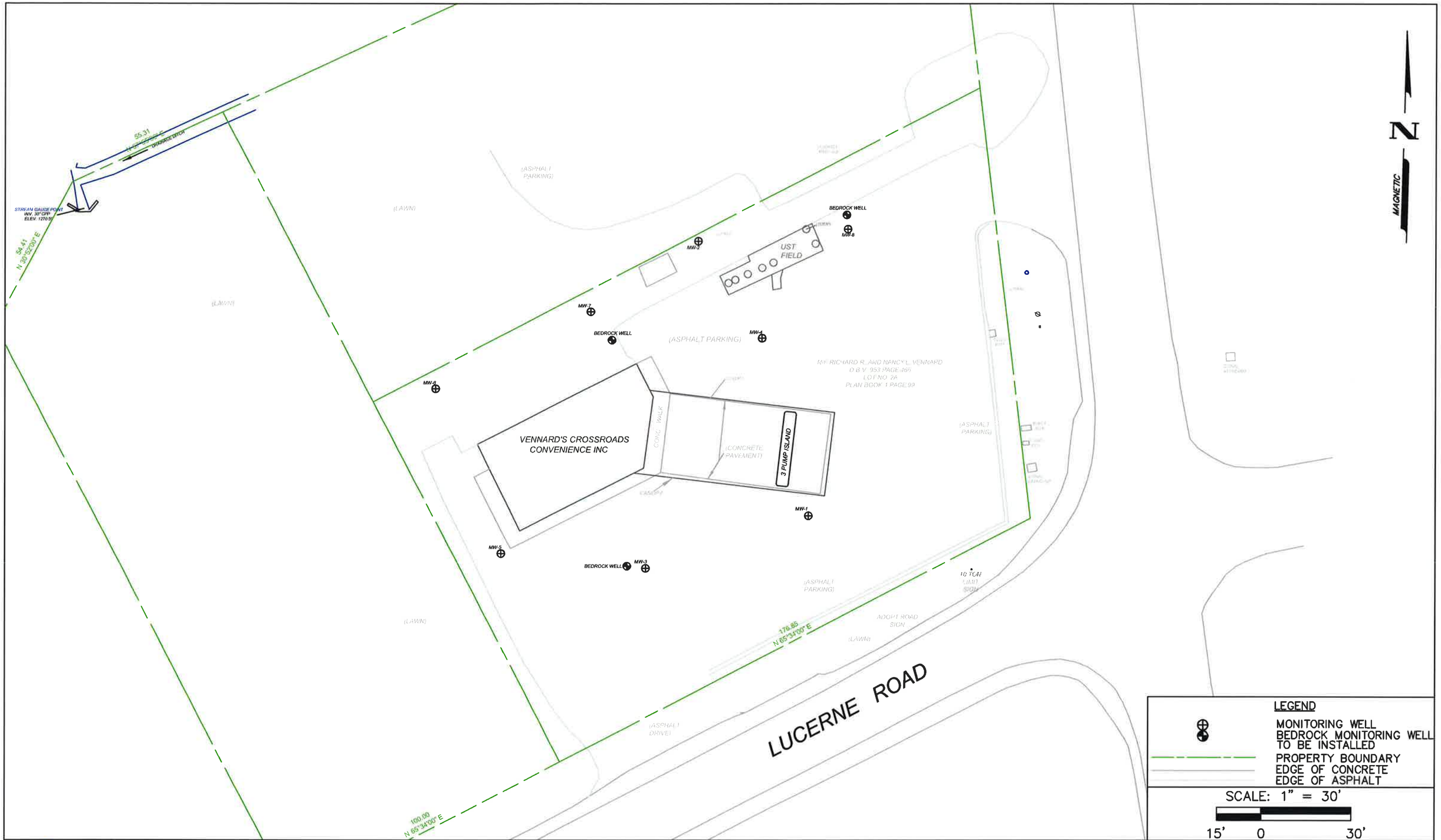
AERIAL EXPANDED MAP
Figure 2



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H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 3 - SITE MAP.DWG

Vennard's
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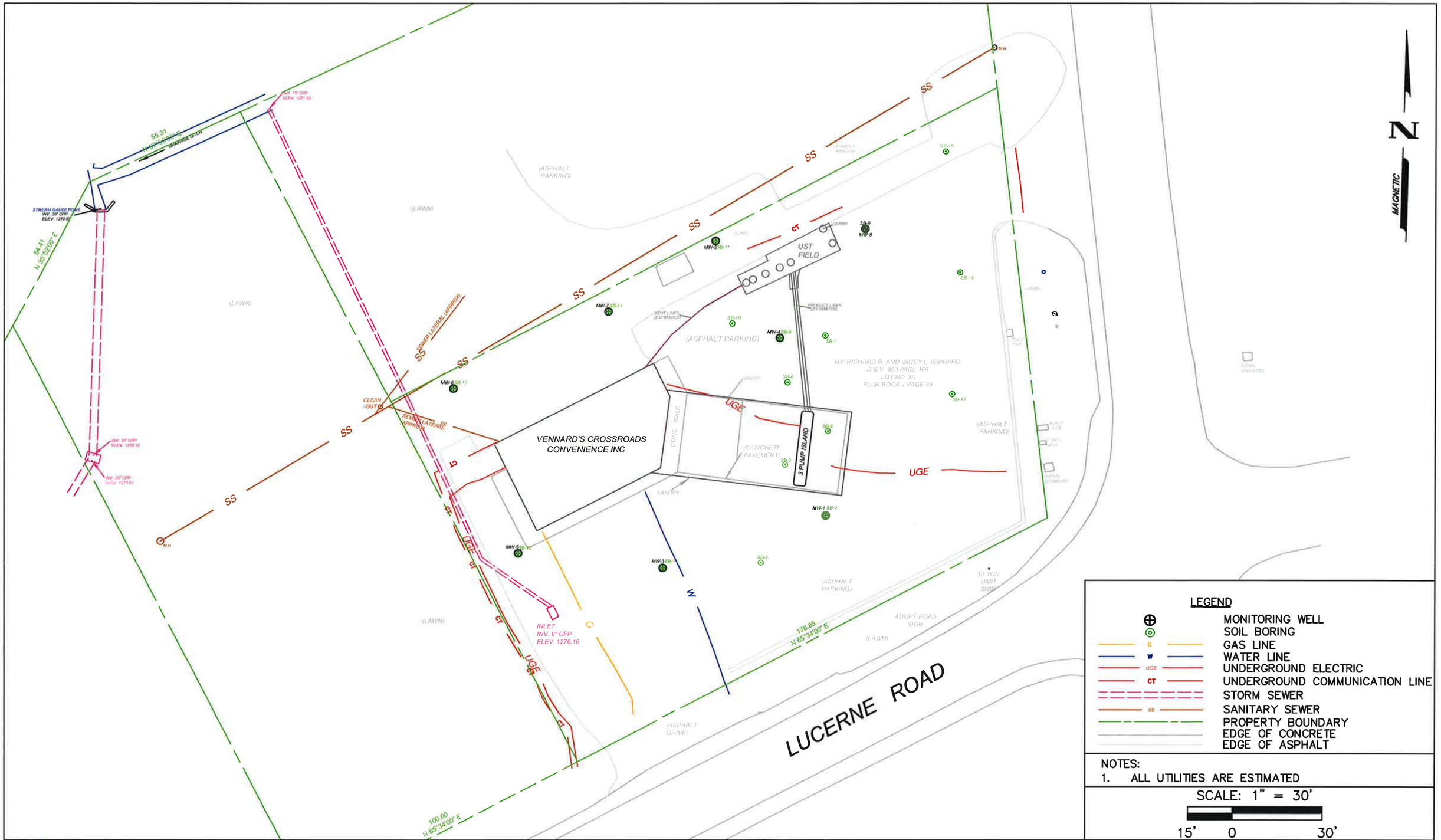
Indiana, PA

SITE MAP
Figure 3



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H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 4 - UTILITY MAP.DWG

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Indiana, PA

UTILITY MAP
Figure 4

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H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 5 - SOIL BORING LOCATION MAP.DWG

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Indiana, PA

SOIL BORING LOCATION MAP
Figure 5

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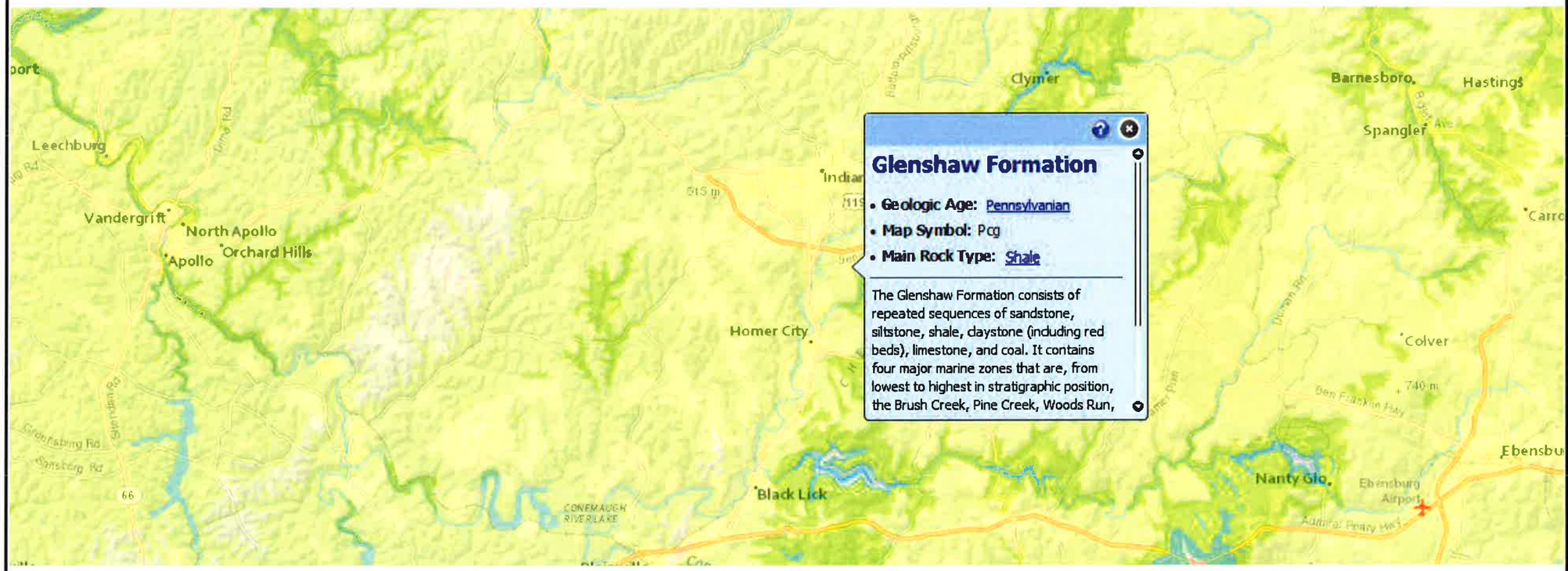

Created using PA DCNR Map Viewer

Map created on Tue November 17, 2015

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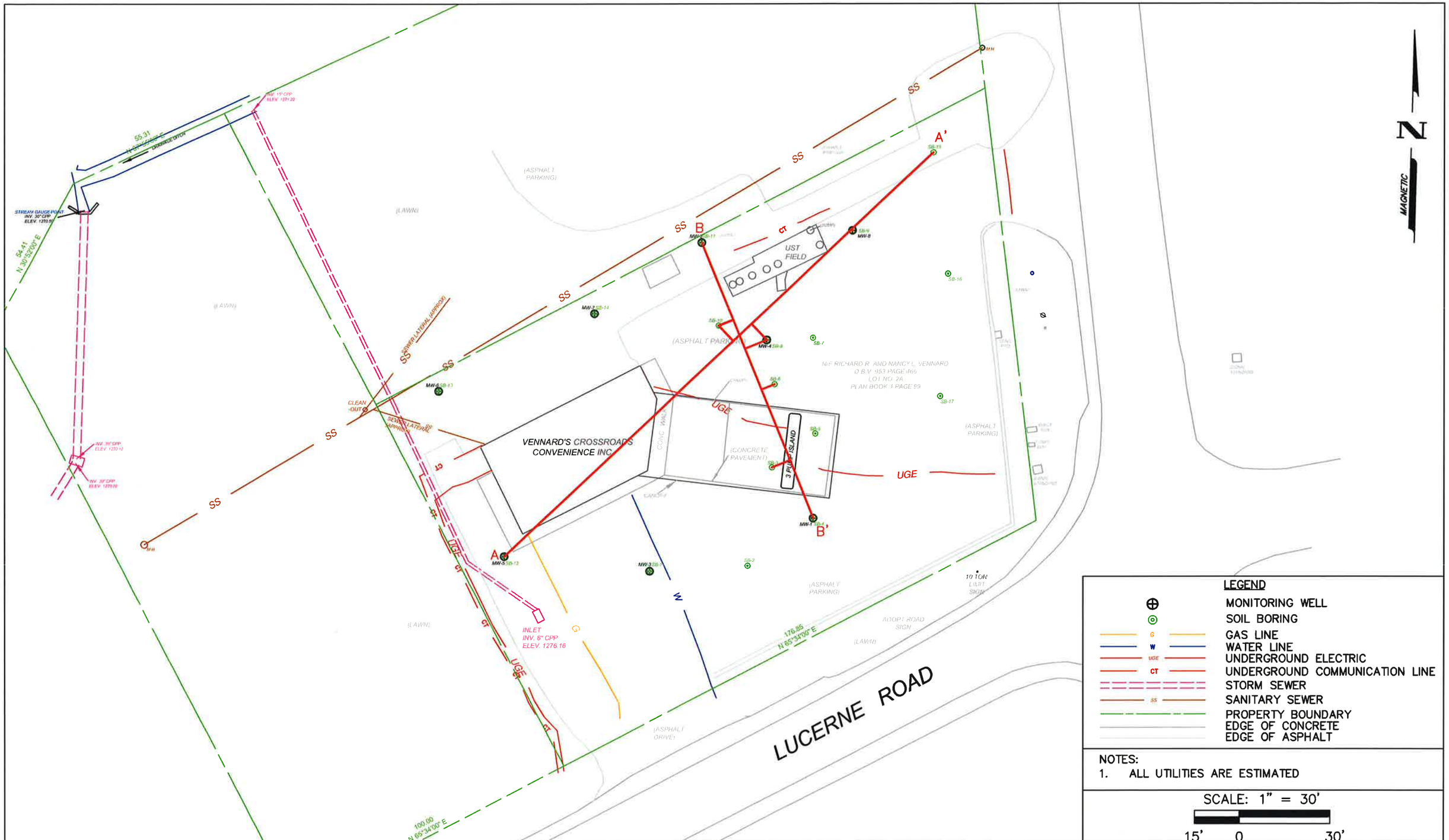
Drawn By: RTH Checked By: MEK Date:11/17/15
H:\V\Vennar's Crossroads Convenience Inc\4644.15.01 Indiana, PA\USTIF Work Plan 2015\MISC\Geo_Map

Vennard's Crossroads Convenience Inc.
4895 Lucerne Road
White Township, Indiana County, PA

Geology Map
Figure 6



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H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 7 - CROSS SECTION LOCATION MAP.DWG

Vennard's
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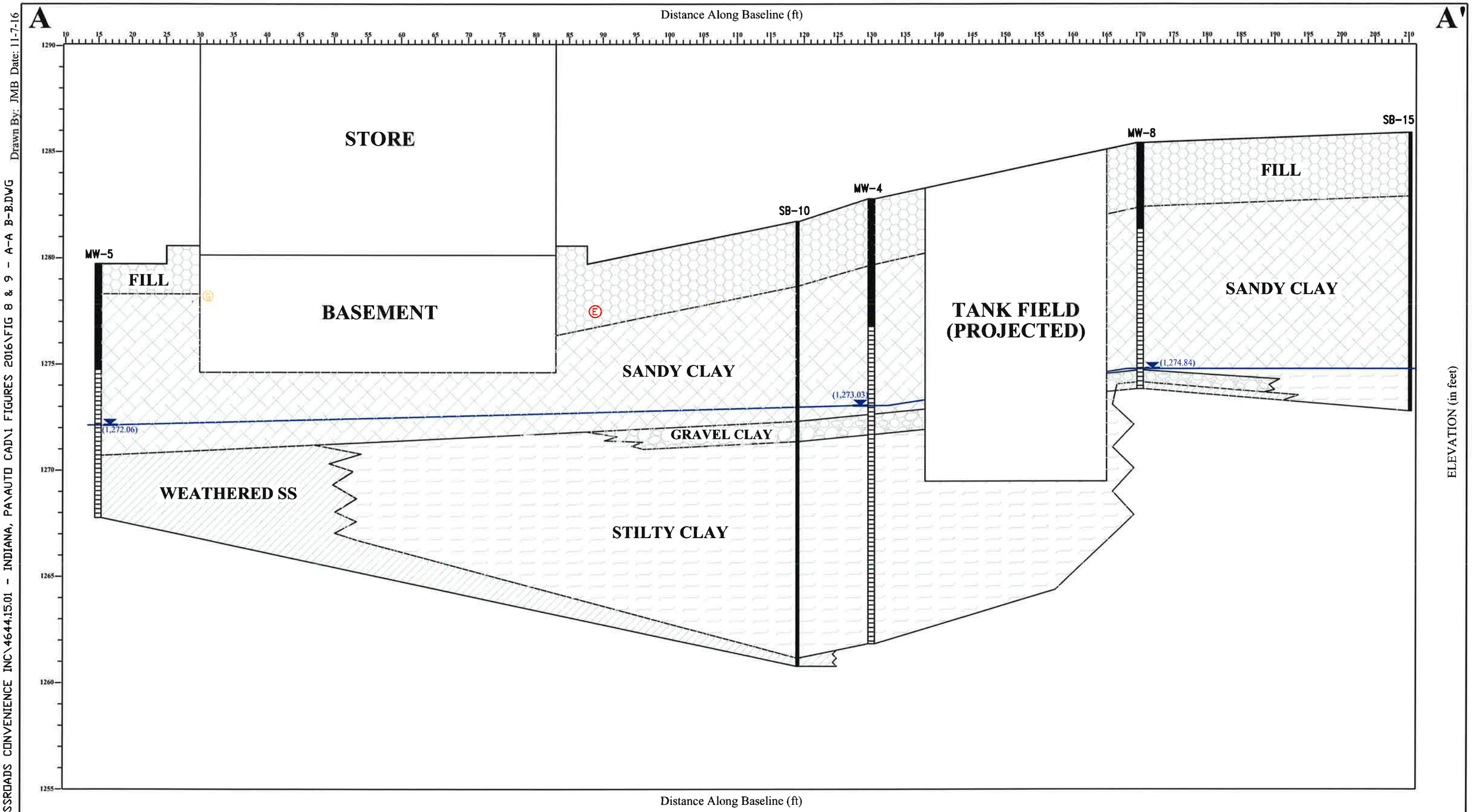
Indiana, PA

CROSS SECTION LOCATION MAP
Figure 7



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LEGEND

- Gravel Clay
- Silty Clay
- Weathered SS
- Sandy Clay
- Fill Material
- GW 10-4-16
- Underground Utilities: Gas, Electric

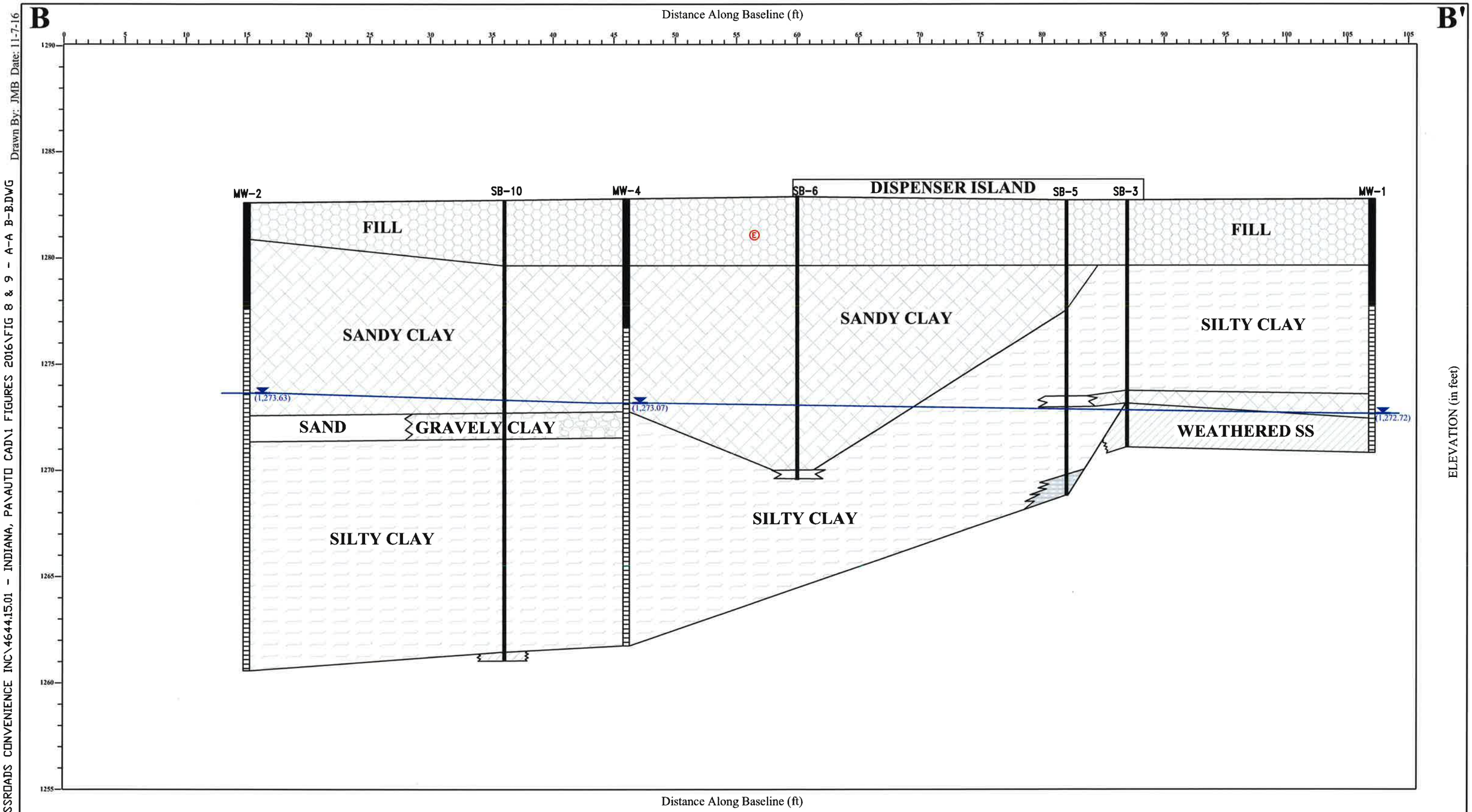
Vennard's

4985 Lucerne Road
Indiana, PA

CROSS SECTION A-A'

Figure 8

H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 8 & 9 - A-A B-B.DWG Drawn By: JMB Date: 11-7-16



Drawn By: JMB Date: 11-7-16

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LEGEND

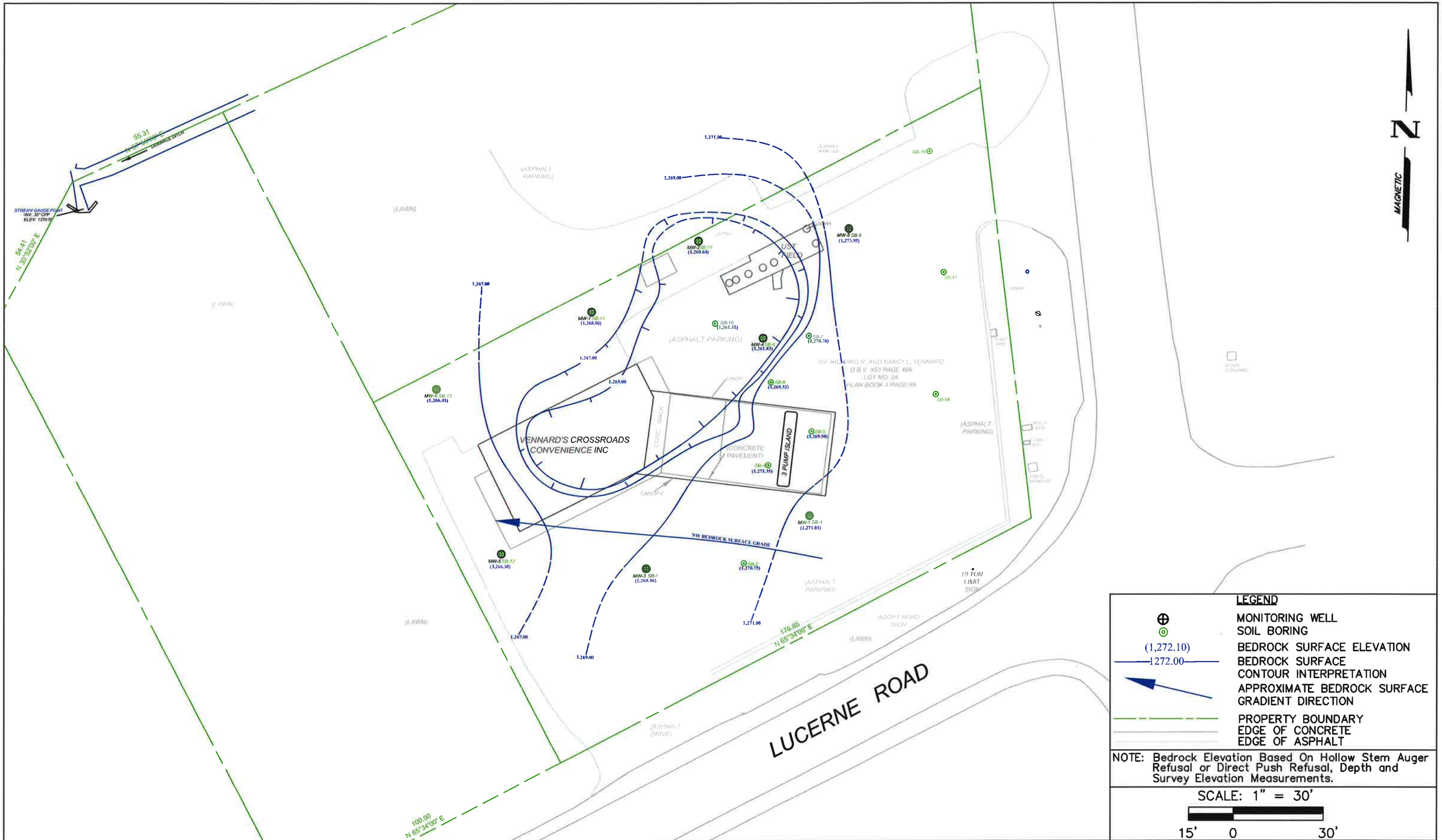
Gravel Clay
Silty Clay
Weathered SS
Sandy Clay
Fill Material
Clay
Sand
GW 10-4-16
Underground Utilities
Gas
Electric

Vennard's

4985 Lucerne Road
Indiana, PA

CROSS SECTION B-B'

Figure 9



LEGEND

- MONITORING WELL
- SOIL BORING
- (1,272.10) BEDROCK SURFACE ELEVATION
- 1272.00 BEDROCK SURFACE CONTOUR INTERPRETATION
- APPROXIMATE BEDROCK SURFACE GRADIENT DIRECTION
- PROPERTY BOUNDARY
- EDGE OF CONCRETE
- EDGE OF ASPHALT

NOTE: Bedrock Elevation Based On Hollow Stem Auger Refusal or Direct Push Refusal, Depth and Survey Elevation Measurements.

SCALE: 1" = 30'

15' 0 30'

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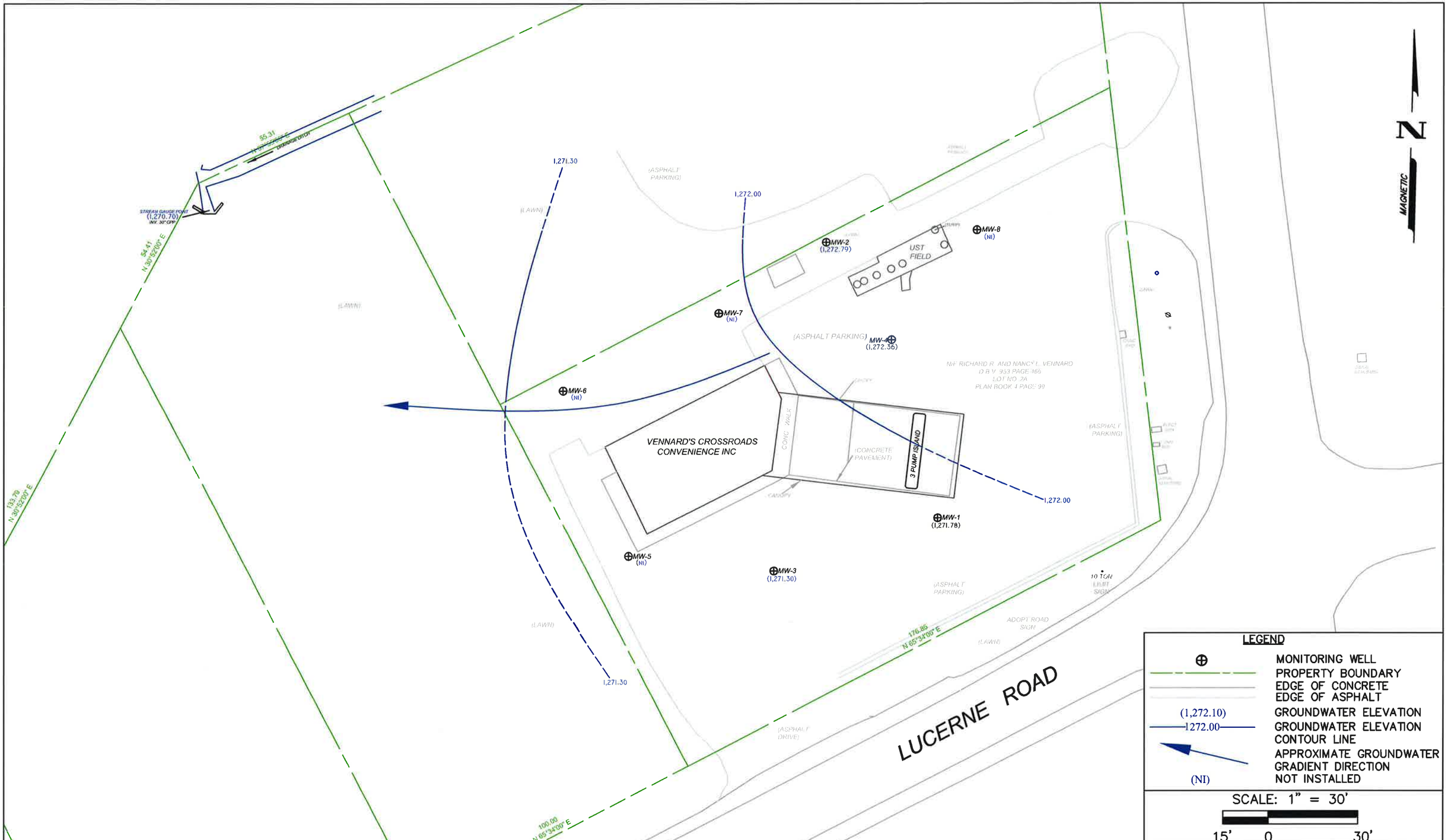
H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 10 - BEDROCK SURFACE ELEVTION MAP.DWG

Vennard's
4985 Lucerne Road
Indiana, PA

BEDROCK SURFACE ELEVATION CONTOUR MAP
Figure 10



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H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 11 - GWEC (7-27-16).DWG

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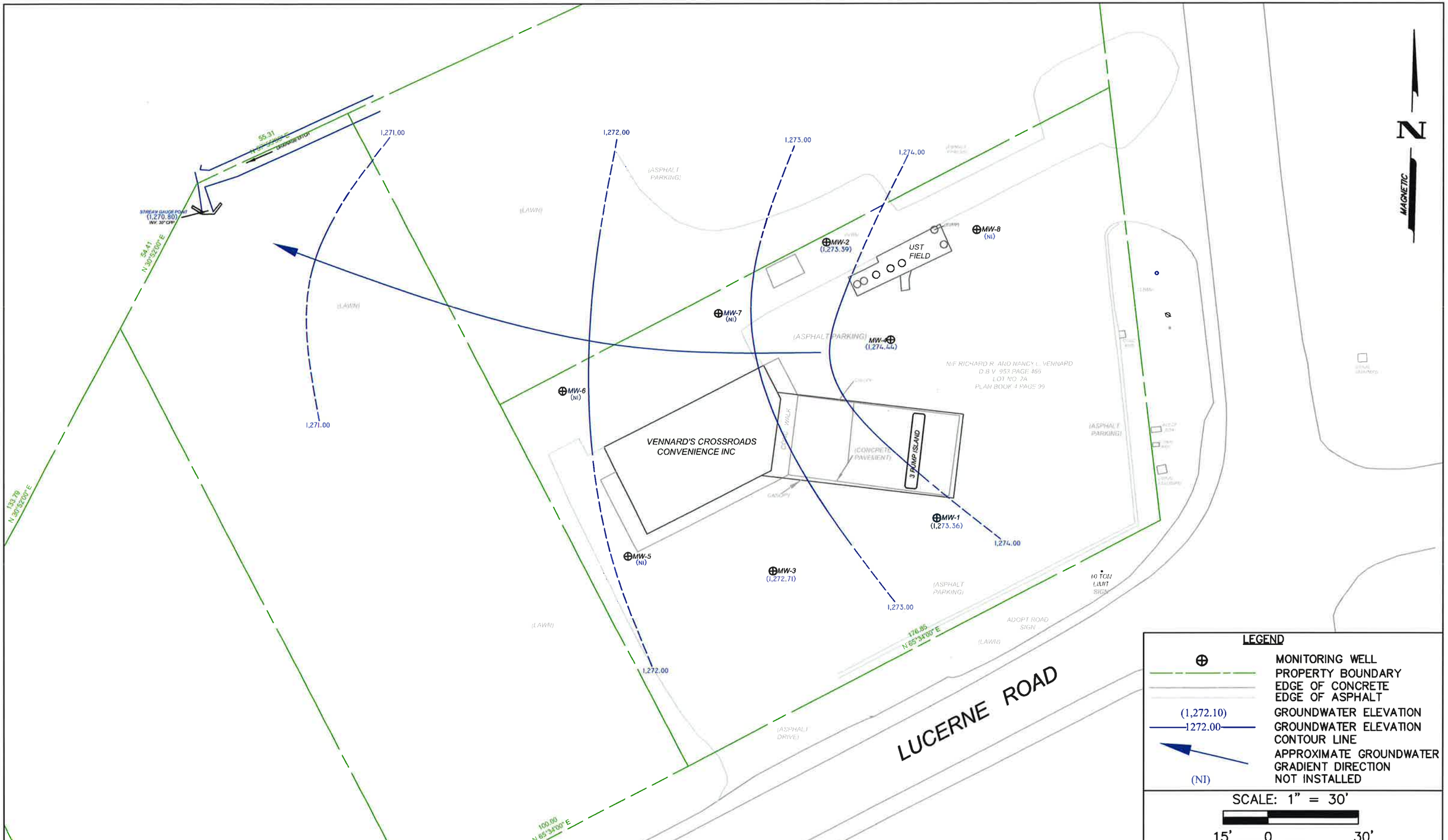
Indiana, PA

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP
July 27, 2016
Figure 11



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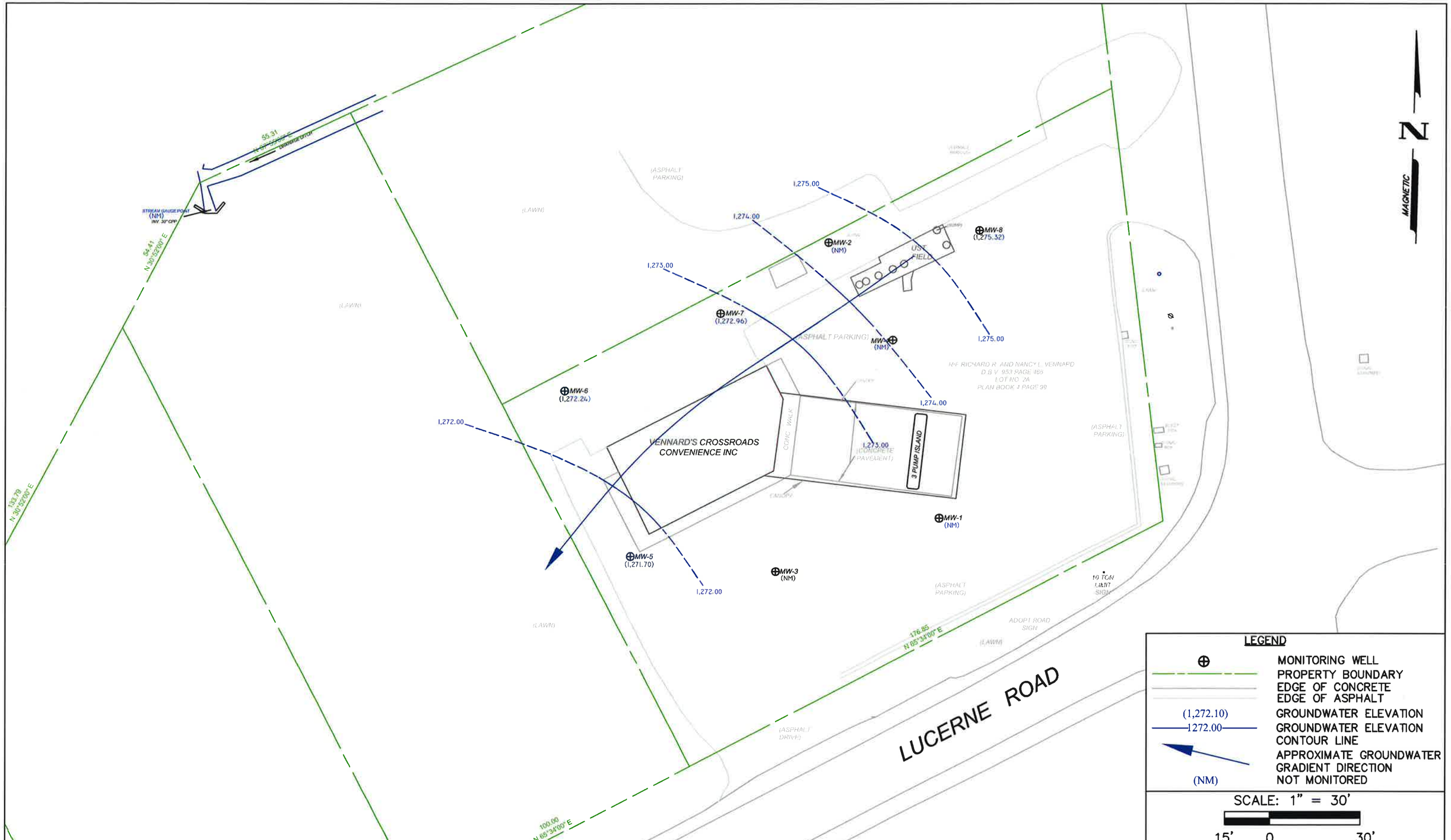
Indiana, PA

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP
August 18, 2016
Figure 12



LEGEND

⊕	MONITORING WELL
	PROPERTY BOUNDARY
	EDGE OF CONCRETE
	EDGE OF ASPHALT
(1,272.10)	GROUNDWATER ELEVATION
1272.00	GROUNDWATER ELEVATION CONTOUR LINE
	APPROXIMATE GROUNDWATER GRADIENT DIRECTION
(NM)	NOT MONITORED

SCALE: 1" = 30'

15' 0 30'

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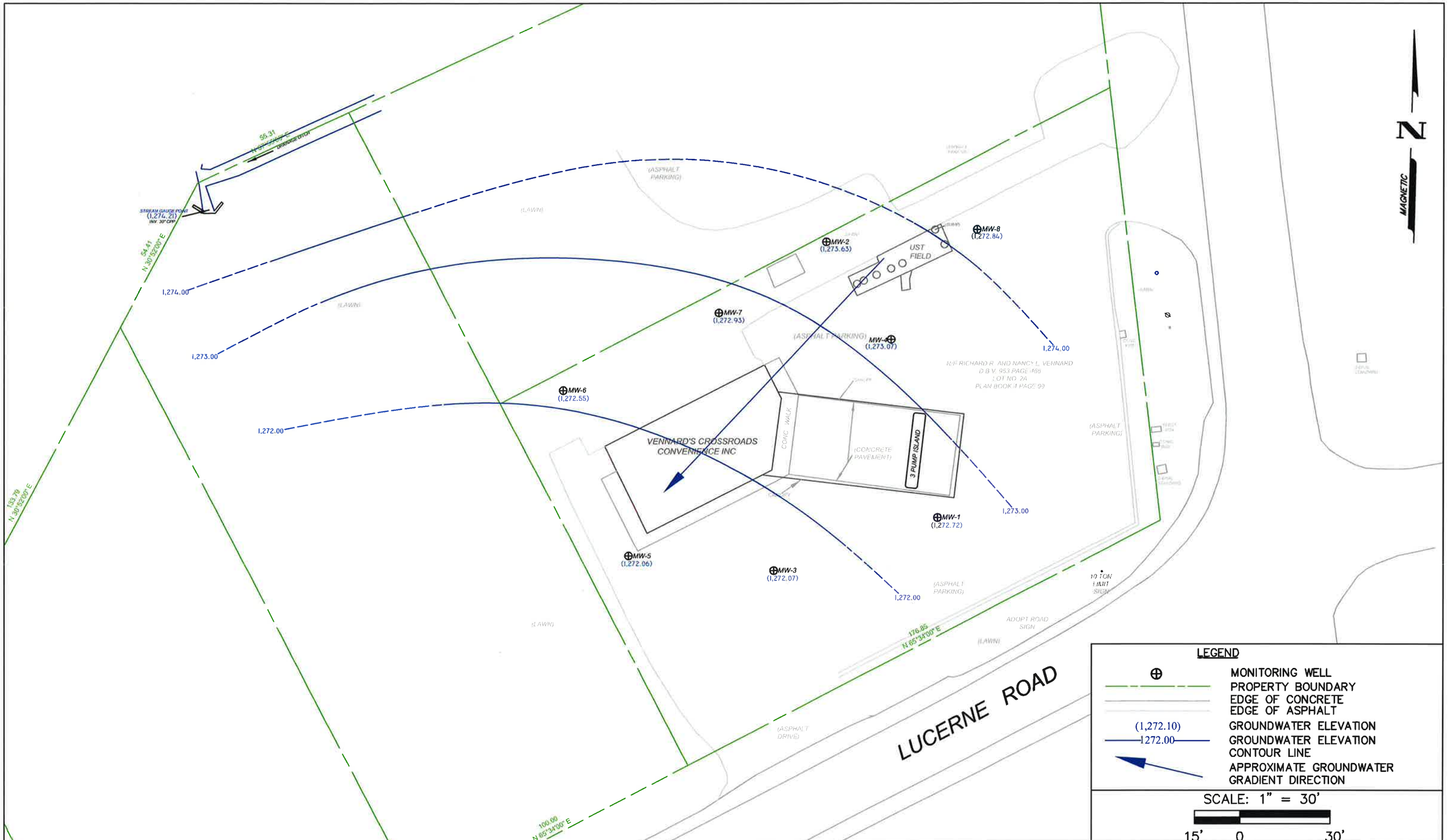
H:\V\VENNARD'S CROSSROADS CONVENIENCE INC\4644.15.01 - INDIANA, PA\AUTO CAD\1 FIGURES 2016\FIG 13 - GWEC (9-19-16).DWG

Vennard's
4985 Lucerne Road
Indiana, PA

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP
September 19, 2016
Figure 13



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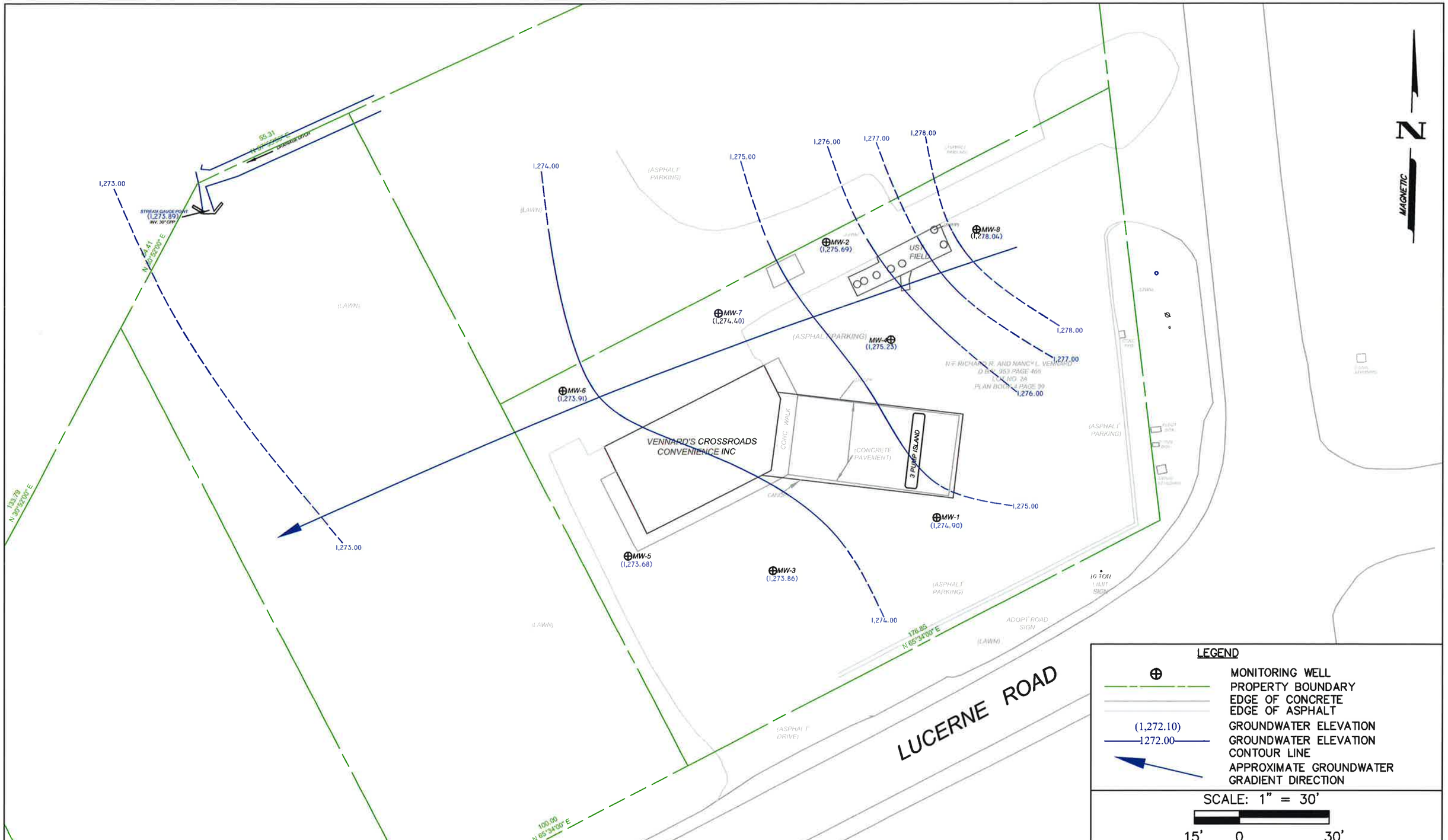
Vennard's
4985 Lucerne Road
Indiana, PA

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP
October 4, 2016
Figure 14



LEGEND

- ⊕ MONITORING WELL
- PROPERTY BOUNDARY
- EDGE OF CONCRETE
- EDGE OF ASPHALT
- (1,272.10) GROUNDWATER ELEVATION
- 1272.00 GROUNDWATER ELEVATION CONTOUR LINE
- APPROXIMATE GROUNDWATER GRADIENT DIRECTION

SCALE: 1" = 30'

15' 0 30'

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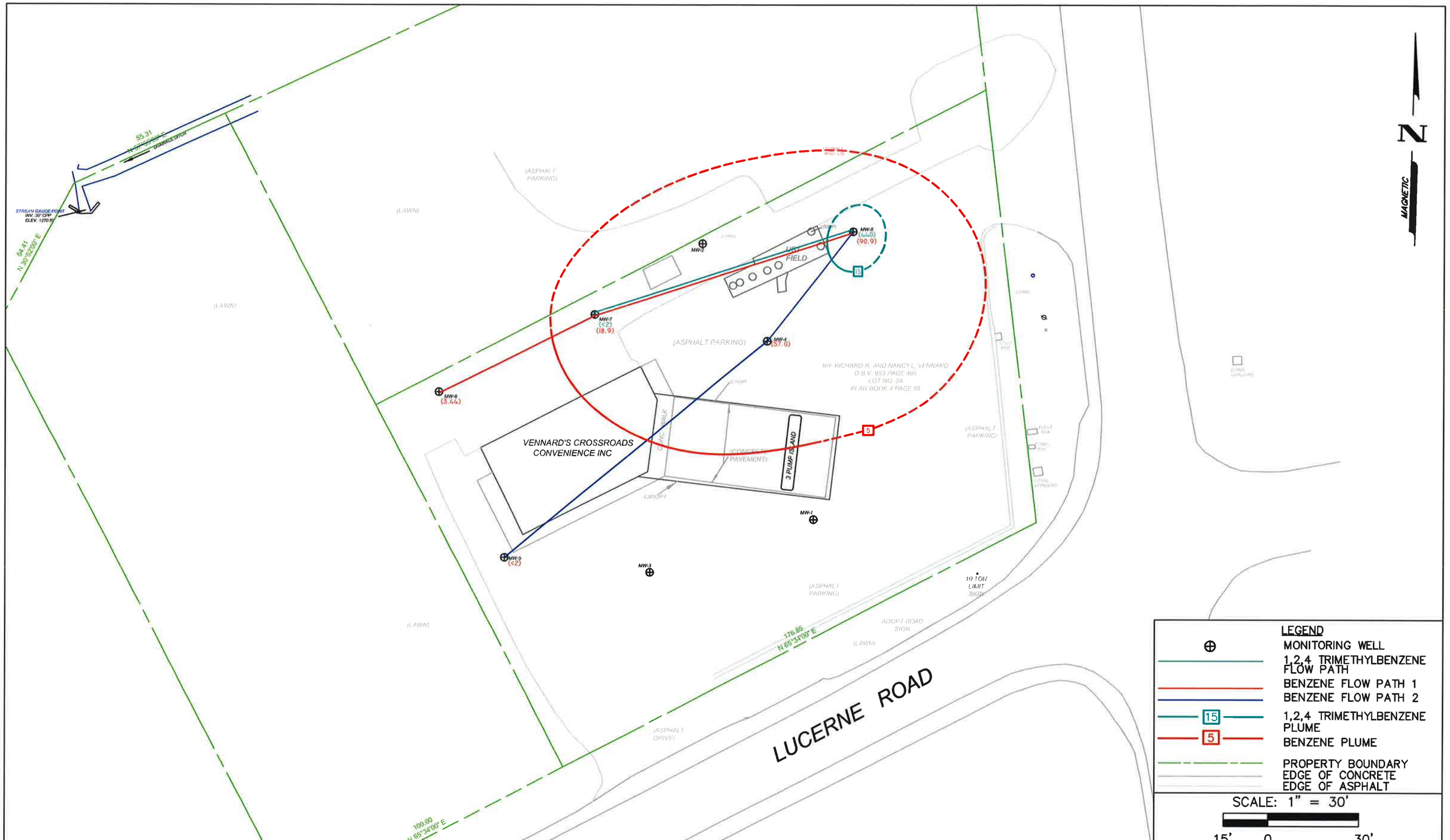
Vennard's
4985 Lucerne Road
Indiana, PA

OVERBURDEN GROUNDWATER ELEVATION CONTOUR MAP
October 31, 2016
Figure 15



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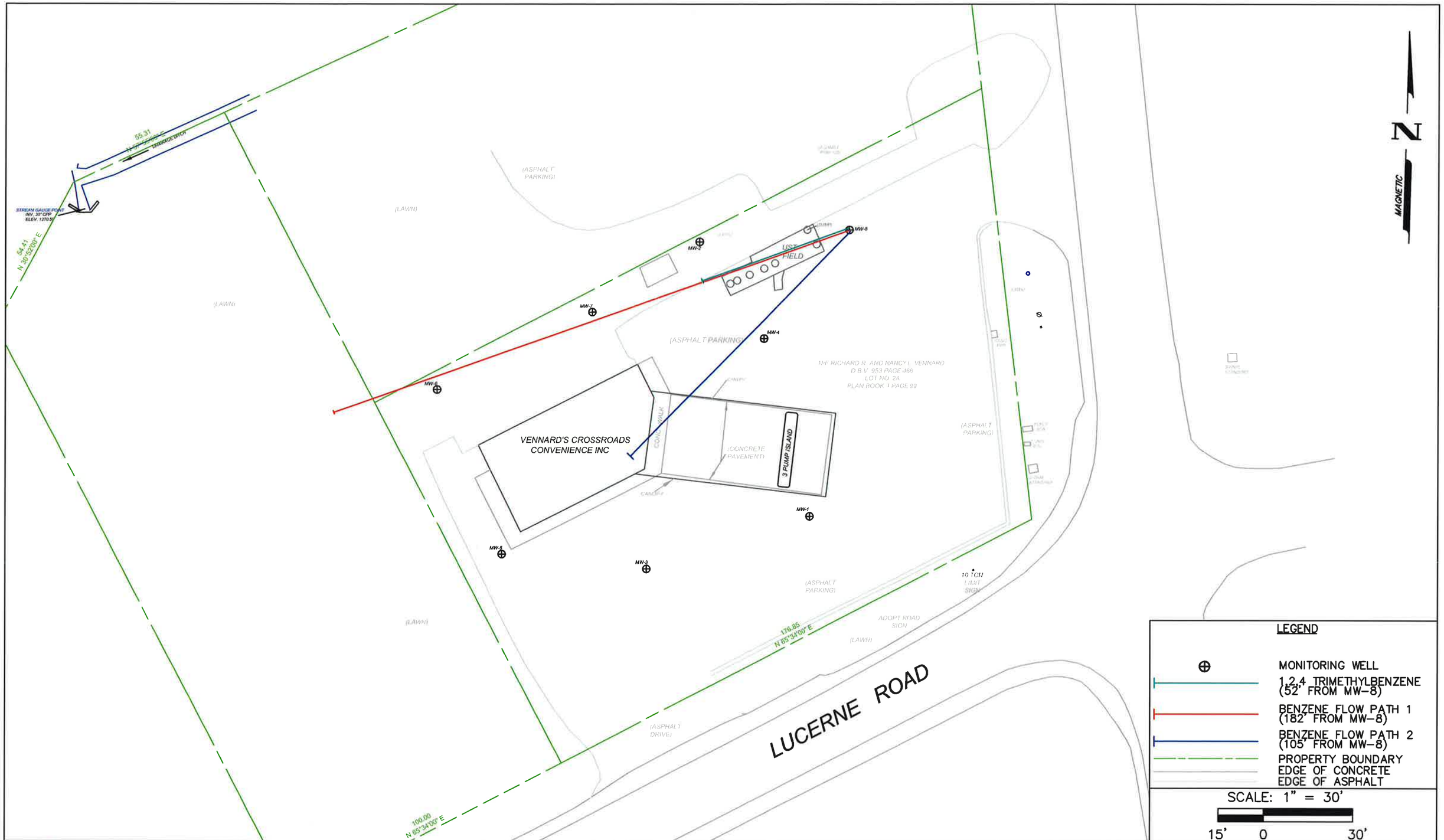
4985 Lucerne Road
Indiana, PA
QD SET UP MAP AND FLOW PATHS
Figure 16



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QUICK DOMENICO MODEL RESULTS
PREDICTED DISTACNE TO MSC IN 30 YEARS BASED ON QD MODELING USING A WORST CASE SCENARIO
Figure 17

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Vennard's
4985 Lucerne Road
Indiana, PA

PROPOSED SOIL VAPOR POINT LOCATION MAP
Figure 18

TABLES

TABLE 1

MONITORING WELL CONSTRUCTION SUMMARY
VENNARD'S CROSSROADS
INDIANA, PA

MRLLC Project No. 4644.15.01

Monitoring Well	Date Drilled	Total Depth (ft)	Casing Size (in) & Material	Slot Size (in) / Screened Interval (ft)	Drilling Method	Casing Elevation (ft)	Well Type
MW-1	**6/23/2016**	12.0'	2" PVC	0.020/12-5'	AUGER RIG	1282.81	OVERBURDEN
MW-2	**6/23/2016**	22.0'	2" PVC	0.020/21.5-5'	AUGER RIG	1282.64	OVERBURDEN
MW-3	**7/6/2016**	11.0'	2" PVC	0.020/-5-11'	AUGER RIG	1280.96	OVERBURDEN
MW-4	**7/6/2016**	21.0'	2" PVC	0.020/6-21'	AUGER RIG	1282.83	OVERBURDEN
MW-5	**9/7/2016**	12.0'	2" PVC	0.020/5-12'	AUGER RIG	1279.88	OVERBURDEN
MW-6	**9/7/2016**	11.5'	2" PVC	0.020/5-11.5'	AUGER RIG	1278.91	OVERBURDEN
MW-7	**9/8/2016**	13.5'	2" PVC	0.020/4-13.5'	AUGER RIG	1281.56	OVERBURDEN
MW-8	**9/8/2016**	11.5'	2" PVC	0.020/4-11.5'	AUGER RIG	1285.45	OVERBURDEN

Prepared By: MF 10/27/2016

Checked By: LL 11/11/2016

TABLE 2

HISTORICAL GROUNDWATER ELEVATIONS

VENNARD'S CROSSROADS CONVENIENCE, INC
INDIANA, INDIANA COUNTY, PA

MR Project No. 4644.15.01

Well ID	Date Measured	Static Water Level (ft)	Depth to Product (ft)	Product Thickness (ft)	Casing Elevation (ft)	Product Adjusted Static Water Level (ft)	Ground Water Elevation (ft)	Comments
MW-1	7/27/2016	11.03	-	0	1282.81	-	1271.78	
	8/18/2016	9.45	-	0	1282.81	-	1273.36	
	10/4/2016	10.09	-	0	1282.81	-	1272.72	
	10/31/2016	7.91	-	0	1282.81	-	1274.90	
MW-2	7/27/2016	9.85	-	0	1282.64	-	1272.79	Odor
	8/18/2016	9.25	-	0	1282.64	-	1273.39	Odor
	10/4/2016	9.01	-	0	1282.64	-	1273.63	Odor
	10/31/2016	6.95	-	0	1282.64	-	1275.69	
MW-3	7/27/2016	9.66	-	0	1280.96	-	1271.30	
	8/18/2016	8.25	-	0	1280.96	-	1272.71	
	10/4/2016	8.89	-	0	1280.96	-	1272.07	
	10/31/2016	7.10	-	0	1280.96	-	1273.86	
MW-4	7/27/2016	10.47	-	0	1282.83	-	1272.36	
	8/18/2016	8.39	-	0	1282.83	-	1274.44	
	10/4/2016	9.76	-	0	1282.83	-	1273.07	
	10/31/2016	7.60	-	0	1282.83	-	1275.23	
MW-5	9/19/2016	8.18	-	0	1279.88	-	1271.70	
	10/4/2016	7.82	-	0	1279.88	-	1272.06	
	10/31/2016	6.20	-	0	1279.88	-	1273.68	
MW-6	9/19/2016	6.67	-	0	1278.91	-	1272.24	
	10/4/2016	6.36	-	0	1278.91	-	1272.55	
	10/31/2016	5.00	-	0	1278.91	-	1273.91	
MW-7	9/19/2016	8.60	-	0	1281.56	-	1272.96	
	10/4/2016	8.63	-	0	1281.56	-	1272.93	
	10/31/2016	7.16	-	0	1281.56	-	1274.40	
MW-8	9/19/2016	10.13	-	0	1285.45	-	1275.32	
	10/4/2016	10.61	-	0	1285.45	-	1274.84	
	10/31/2016	7.41	-	0	1285.45	-	1278.04	
nk Field Sur	7/27/2016	8.85	8.66	0.19	1284.41	8.70	1275.71	
	8/18/2016	7.80	7.65	0.15	1284.41	7.68	1276.73	
	10/4/2016	7.05			1284.41		1284.41	
	10/31/2016	6.10	5.89	0.21	1284.41		1284.41	
STREAM	7/27/2016	3.50	-	0	1274.20	-	1270.70	
	8/18/2016	3.40	-	0	1274.20	-	1270.80	
	10/4/2016	3.47			1274.2		1270.73	
	10/31/2016	0.31			1274.2		1273.89	

SWL* = SWL corrected to compensate for the presence of free product: SWL* = SWL - (PT * 0.78)
Where PT = product thickness and 0.78 is the average density of petroleum hydrocarbons.

Prepared By: LML 10/11/2016

Checked By: MF 10/27/2016

Table 3

Aquifer Hydraulic Values from Slug Tests Conducted in September 2016
Vennard's Crossroads
Indiana, Pennsylvania

MRLLC Project No. 4644.15.01

Summary of Aquifer Test Responses and Analyses

Test Type	Well	Test Phase	Analysis Method	Transmissivity (ft2/d)	B (ft)	K (ft/d)
Slug	MW-2	Rising Head	Bouwer & Rice	0.85	12.25	0.0691
		Falling Head	Bouwer & Rice	0.73		0.0595
	MW-3	Rising Head	Bouwer & Rice	0.10	2.36	0.0413
		Falling Head	Bouwer & Rice	0.065962		0.0280
	MW-4	Rising Head	Bouwer & Rice	0.000034	10.65	0.000003
		Falling Head	Bouwer & Rice	1.614540		0.1516
	MW-6	Rising Head	Bouwer & Rice	0.63	4.65	0.1352
		Falling Head	Bouwer & Rice	0.43		0.0915
	MW-7	Rising Head	Bouwer & Rice	0.17	4.55	0.0376
		Falling Head	Bouwer & Rice	1.22		0.2686
			Slug Test Median:	**0.5**		**0.064**
			Slug Test Average:	**0.6**	**6.9**	**0.1**
			Geometric mean:			**0.028**

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TABLE 4
SOIL SAMPLE ANALYTICAL SUMMARY
VENNARD'S CROSSROADS CONVENIENCE INC.
INDIANA, INDIANA COUNTY,PA
MR Project No. 4644.15.01

				PADEP Residential Medium Specific Concentration (MSC)								
			saturated	1,500	42,000	500	70,000	350,000	2,000	10,000	100,000	10,000,000
			unsaturated	8,400	74,000	500	70,000	600,000	2,000	25,000	100,000	1,000,000
				Sample Parameters ug/KG								
Sample Location (Depth)	Saturated (S) Periodically Saturated (PS) Unsaturated (U)	PID Reading (PPM)	Sample Date	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Ethylbenzene	Cumene	MTBE	Napthalene	Toluene	Total Xylenes
SB-1 (11')	S	0	6/22/2016	<226	<226	<226	<226	<226	<226	<226	<226	<678
SB-2 (11')	S	0	6/22/2016	<223	<223	<223	<223	<223	<223	<223	<223	<670
SB-3 (8')	PS	255	6/22/2016	**389**	<234	**520**	**541**	<234	<234	<234	**3,210**	**3,460**
SB-3 (12')	S	530	6/22/2016	<237	<237	**433**	**575**	<237	<237	<237	<237	<710
SB-4 (9.5')	PS	0	6/22/2016	<225	<225	<225	<225	<225	<225	<225	<225	<675
SB-5 (13.5')	S	0.9	6/22/2016	<233	<233	<233	<233	<233	<233	<233	<233	<698
SB-6 (6')	U	1467	6/22/2016	**7,960**	**2,210**	<225	**3,840**	**228**	<225	**678**	**480**	**15,800**
SB-6 (11')	PS	540	6/22/2016	**13,000**	**4,040**	<225	**7,030**	**651**	<225	**1,160**	**3,400**	**34,400**
SB-7 (8')	PS	23	6/22/2016	<224	<224	<224	<224	<224	<224	<224	<224	<671
SB-7 (13')	S	270	6/22/2016	**375**	<227	<227	**455**	<227	<227	<227	<227	**2,120**
SB-8 (10')	PS	264	6/22/2016	**235**	<227	<227	**444**	<227	<227	<227	**2,470**	**2,770**
SB-8 (15')	S	20.3	6/22/2016	<230	<230	<230	<230	<230	<230	<230	<230	<690
SB-9 (9.5')	PS	6.5	6/22/2016	**15,300**	**5,470**	**1,790**	**391**	**904**	<229	**1,020**	<229	**6,480**
SB-9 (10.5')	S	105	6/22/2016	**78,300**	**24,900**	**5,650**	**4,510**	**4,590**	<234	**6,220**	**544**	**44,100**
SB-10 (15')	S	1.4	6/22/2016	<240	<240	<240	<240	<240	<240	<240	<240	<721
SB-10 (18.5')	S	0.3	6/22/2016	<246	<246	<246	<246	<246	<246	<246	**261**	<739
SB-10 (21.5')	S	181	6/22/2016	<224	<224	<224	<224	<224	<224	<224	<224	<673
SB-11 (19.0')	S	97.5	6/22/2016	<235	<235	<235	<235	<235	<235	<235	<235	<704
SB-11 (21.5')	S	2.4	6/22/2016	<220	<220	<220	<220	<220	<220	<220	<220	<660
SB-12 (8.5')	S	0	9/7/2016	<228	<228	<228	<228	<228	<228	<228	<228	<683
SB-13 (10')	S	0	9/7/2016	<234	<234	<234	<234	<234	<234	<234	<234	<703
SB-14 (6')	U	4.1	9/8/2016	<229	<229	<229	<229	<229	<229	<229	<229	<686
SB-14 (7')	U	12.2	9/8/2016	<226	<226	<226	<226	<226	<226	<226	<226	<677
SB-14 (11')	S	0.3	9/8/2016	<231	<231	<231	<231	<231	<231	<231	<231	<692
SB-14 (13')	S	2.1	9/8/2016	<268	<268	<268	<268	<268	<268	<268	<268	<805
SB-15 (12.5)	U	0	9/7/2016	<233	<233	<233	<233	<233	<233	<233	<233	<700
SB-16 (14.0)	U	0	9/7/2016	<238	<238	<238	<238	<238	<238	<238	<238	<713
SB-17 (13')	U	0	9/7/2016	<238	<238	<238	<238	<238	<238	<238	<238	<713

Prepared By: PAM 9/2/2016
Checked By: LML 10/7/2016

All concentrations presented as micrograms per kilogram (ug/kg).

Bold = Detected
Shaded and Bold = PADEP MSC Exceedance

TABLE 5

GROUNDWATER SAMPLE ANALYTICAL SUMMARY - DRAFT

VENNARD'S CROSSROADS CONVENIENCE, INC
INDIANA, INDIANA CO., PA

MR Project No. #4644.15.01

		PADEP Residential Used Aquifer (RUA) Medium Specific Concentrations (MSC)								
		15	420	5	700	840	20	100	1,000	10,000
		Sample Parameters								
WELL ID	Sample Date	1,2,4 - Trimethylbenzene	1,3,5 - Trimethylbenzene	Benzene	Ethylbenzene	Cumene	MTBE	Naphthalene	Toluene	Total Xylenes
MW-1	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	2.40	<2.00	<2.00	<6.00
	10/31/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
MW-2	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	9.77	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	2.86	<2.00	<2.00	11.3	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	14.5	4.84	<2.00	9.73	<2.00	<2.00	<6.00
	10/31/2016	6.84	<2.00	49.00	13.3	<2.00	<2.00	<2.00	13.00	43.8
MW-3	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	4.76	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	<2.00	<2.00	<2.00	6.35	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	5.92	<2.00	<2.00	<6.00
	10/31/2016	<2.00	<2.00	<2.00	<2.00	<2.00	6.96	<2.00	<2.00	<6.00
MW-4	7/27/2016	<2.00	<2.00	28.7	5.20	<2.00	22.2	<2.00	17.7	21.1
	8/18/2016	<2.00	<2.00	18.2	<2.00	<2.00	18.0	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	57.0	5.19	<2.00	18.9	<2.00	<2.00	7.42
	10/31/2016	17.8	6.1	25.2	36.3	<2.00	8.7	<2.00	48.2	202
MW-5	9/19/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/312016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
MW-6	9/19/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	3.44	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/31/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
MW-7	9/19/2016	<2.00	<2.00	<2.00	<2.00	<2.00	2.30	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	18.9	11.1	<2.00	2.67	<2.00	13.5	7.34
	10/31/2016	6.12	<2.00	49.7	10.4	<2.00	2.39	<2.00	26.8	65.2
MW-8	9/19/2016	196	85.9	71.3	36.4	10.8	<2.00	33.7	21.5	229
	10/4/2016	440	121	90.9	66.8	20.7	<2.00	73.6	25.9	388
	10/31/2016	452	124	1,920	354	32.9	26.4	82.9	2,310	2,540
STREAM	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/31/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00

Prepared By: HH 10/20/16

Checked By: LL 10/20/16

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TABLE 6
SOIL SAMPLE ANALYTICAL SUMMARY
COMPARED TO PA DEFAULTS RESIDENTIAL VOLATILIZATION TO INDOOR AIR SCREEN
VENNARD'S CROSSROADS CONVENIENCE INC.
INDIANA, INDIANA COUNTY,PA

MR Project No. 4644.15.01

PA Default Residential Volatilization to Indoor Air Screen Values			20,000	NA	370	5,700	360,000	51,000	64,000	76,000	55,000
			Sample Parameters								
Sample Location (Depth)	PID Reading (PPM)	Sample Date	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Ethylbenzene	Cumene	MTBE	Napthalene	Toluene	Total Xylenes
SB-1 (11')	0	6/22/2016	<226	<226	<226	<226	<226	<226	<226	<226	<678
SB-2 (11')	0	6/22/2016	<223	<223	<223	<223	<223	<223	<223	<223	<670
SB-3 (8')	255	6/22/2016	**389**	<234	**520**	**541**	<234	<234	<234	**3,210**	**3,460**
SB-3 (12')	530	6/22/2016	<237	<237	**433**	**575**	<237	<237	<237	<237	<710
SB-4 (9.5')	0	6/22/2016	<225	<225	<225	<225	<225	<225	<225	<225	<675
SB-5 (13.5')	0.9	6/22/2016	<233	<233	<233	<233	<233	<233	<233	<233	<698
SB-6 (6')	1467	6/22/2016	**7,960**	**2,210**	<225	**3,840**	**228**	<225	**678**	**480**	**15,800**
SB-6 (11')	540	6/22/2016	**13,000**	**4,040**	<225	**7,030**	**651**	<225	**1,160**	**3,400**	**34,400**
SB-7 (8')	23	6/22/2016	<224	<224	<224	<224	<224	<224	<224	<224	<671
SB-7 (13')	270	6/22/2016	**375**	<227	<227	**455**	<227	<227	<227	<227	**2,120**
SB-8 (10')	264	6/22/2016	**235**	<227	<227	**444**	<227	<227	<227	**2,470**	**2,770**
SB-8 (15')	20.3	6/22/2016	<230	<230	<230	<230	<230	<230	<230	<230	<690
SB-9 (9.5')	6.5	6/22/2016	**15,300**	**5,470**	**1,790**	**391**	**904**	<229	**1,020**	<229	**6,480**
SB-9 (10.5')	105	6/22/2016	**78,300**	**24,900**	**5,650**	**4,510**	**4,590**	<234	**6,220**	**544**	**44,100**
SB-10 (15')	1.4	6/22/2016	<240	<240	<240	<240	<240	<240	<240	<240	<721
SB-10 (18.5')	0.3	6/22/2016	<246	<246	<246	<246	<246	<246	<246	**261**	<739
SB-10 (21.5')	181	6/22/2016	<224	<224	<224	<224	<224	<224	<224	<224	<673
SB-11 (19.0')	97.5	6/22/2016	<235	<235	<235	<235	<235	<235	<235	<235	<704
SB-11 (21.5')	2.4	6/22/2016	<220	<220	<220	<220	<220	<220	<220	<220	<660
SB-12 (8.5')	0	9/7/2016	<228	<228	<228	<228	<228	<228	<228	<228	<683
SB-13 (10')	0	9/7/2016	<234	<234	<234	<234	<234	<234	<234	<234	<703
SB-14 (6')	4.1	9/8/2016	<229	<229	<229	<229	<229	<229	<229	<229	<686
SB-14 (7')	12.2	9/8/2016	<226	<226	<226	<226	<226	<226	<226	<226	<677
SB-14 (11')	0.3	9/8/2016	<231	<231	<231	<231	<231	<231	<231	<231	<692
SB-14 (13')	2.1	9/8/2016	<268	<268	<268	<268	<268	<268	<268	<268	<805
SB-15 (12.5)	0	9/7/2016	<233	<233	<233	<233	<233	<233	<233	<233	<700
SB-16 (14.0)	0	9/7/2016	<238	<238	<238	<238	<238	<238	<238	<238	<713
SB-17 (13')	0	9/7/2016	<238	<238	<238	<238	<238	<238	<238	<238	<713

Prepared By: PAM 9/2/2016
Checked By: LML 10/7/2016

All concentrations presented as micrograms per kilogram (ug/kg).
Bold = Detected
Shaded and Bold = Screening Value Exceedance

TABLE 7

GROUNDWATER SAMPLE ANALYTICAL SUMMARY
COMPARED TO PA DEFAULTS RESIDENTIAL VOLATILIZATION TO INDOOR AIR SCREEN
VENNARD'S CROSSROADS CONVENIENCE, INC
INDIANA, INDIANA CO., PA

MR Project No. #4644.15.01

Volatilization to Indoor Air Screen		8,600	7,200	3,500	27,000	NOC	380,000	25,000	490,000	130,000
		Sample Parameters								
WELL ID	Sample Date	1,2,4 - Trimethylbenzene	1,3,5 - Trimethylbenzene	Benzene	Ethylbenzene	Cumene	MTBE	Naphthalene	Toluene	Total Xylenes
MW-1	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	**2.40**	<2.00	<2.00	<6.00
MW-2	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	**9.77**	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	**2.86**	<2.00	<2.00	**11.3**	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	**14.5**	**4.84**	<2.00	**9.73**	<2.00	<2.00	<6.00
MW-3	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	**4.76**	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	<2.00	<2.00	<2.00	**6.35**	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	**5.92**	<2.00	<2.00	<6.00
MW-4	7/27/2016	<2.00	<2.00	**28.7**	**5.20**	<2.00	**22.2**	<2.00	**17.7**	**21.1**
	8/18/2016	<2.00	<2.00	**18.2**	<2.00	<2.00	**18.0**	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	**57.0**	**5.19**	<2.00	**18.9**	<2.00	<2.00	**7.42**
MW-5	9/19/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
MW-6	9/19/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	**3.44**	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
MW-7	9/19/2016	<2.00	<2.00	<2.00	<2.00	<2.00	**2.30**	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	**18.9**	**11.1**	<2.00	**2.67**	<2.00	**13.5**	**7.34**
MW-8	9/19/2016	**196**	**85.9**	**71.3**	**36.4**	**10.8**	<2.00	**33.7**	**21.5**	**229**
	10/4/2016	**440**	**121**	**90.9**	**66.8**	**20.7**	<2.00	**73.6**	**25.9**	**388**
STREAM	7/27/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	8/18/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00
	10/4/2016	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<6.00

Prepared By: HH 10/20/16

Checked By: LL 10/20/16

APPENDIX A

CHARACTERISTICS OF REGULATED SUBSTANCES

1,2,4 – TRIMETHYLBENZENE

Water Solubility (WS)	Density (d)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Lower Explosive Limit (LEL)	

1. 1,2,4 - TRIMETHYLBENZENE (CAS 95-63-6)

WS	= 56 ppm	d	= 0.876 g/ml
Koc	= 2,200	VP	= 4.5 mm Hg @ 20°C
LEL	= 9,ppm		

1,2,4 – Trimethylbenze (TMB) is primarily released into the environment through spills of petroleum products. TMB is considered volatile, therefore when released onto surface water(s) and soil(s) TMB will be lost to evaporation and microbial degradation. The high Koc and low solubility values indicate that TMB has little affinity for water leading to the conclusion that TMB will largely remain in the soil in the event of a sub-surface release. Additionally, density (d) of TMB is less than 1 indicating it is lighter than water.

TMB is moderately toxic to humans targeting the nervous system. TMB is not classified as a carcinogen. The non-residential Statewide Health Standard established for TMB is 35 ppb in ground water.

1,3,5 – TRIMETHYLBENZENE

Water Solubility (WS)	Density (d)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Lower Explosive Limit (LEL)	

1. 1,3,5 - TRIMETHYLBENZENE (CAS 108-67-8)

WS	= 48.9 ppm	d	= 0.8637 g/ml
Koc	= 660	VP	= 2 mm Hg @ 20°C
LEL	= Not listed in Niosh Pocket Guide		

1,3,5 – Trimethylbenze (TMB) is primarily released into the environment through spills of petroleum products. TMB is considered volatile, therefore when released onto surface water(s) and soil(s) TMB will be lost to evaporation and microbial degradation. The high Koc and low solubility values indicate that TMB has little affinity for water leading to the conclusion that TMB will largely remain in the soil in the event of a sub-surface release. Additionally, density (d) of TMB is less than 1 indicating it is lighter than water.

TMB is moderately toxic to humans targeting the nervous system. TMB is not classified as a carcinogen. The non-residential Statewide Health Standard established for TMB is 35 ppb in ground water.

BENZENE

Aqueous Solubility (AS)	Specific Gravity (SG)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Degradation Coefficient (K)	Lower Explosive Limit (LEL)

Benzene (CAS 71-43-2) (Ref. 1)

AS	= 1,780.5 mg/L (Ref. 1)	SG	= 0.88 (Ref. 2)
Koc	= 58 (Ref. 1)	VP	= 75 mm Hg (Ref. 2)
K	= 0.35 (yr^{-1}) (Ref. 1)	LEL	= 1.2% (Ref. 2)

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

TOLUENE

Aqueous Solubility (AS)	Specific Gravity (SG)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Degradation Coefficient (K)	Lower Explosive Limit (LEL)

Toluene (CAS 108-88-3) (Ref. 1)

AS	= 532.4 mg/L (Ref. 1)	SG	= 0.87 (Ref. 2)
Koc	= 130 (Ref. 1)	VP	= 21 mm Hg (Ref. 2)
K	= 9.01 (yr^{-1}) (Ref. 1)	LEL	= 1.1% (Ref. 2)

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

ETHYLBENZENE

Aqueous Solubility (AS)	Specific Gravity (SG)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Degradation Coefficient (K)	Lower Explosive Limit (LEL)

Ethylbenzene (CAS 100-41-4) (Ref. 1)

AS	= 161 mg/L (Ref. 1)	SG	= 0.87 (Ref. 2)
Koc	= 220 (Ref. 1)	VP	= 7 mm Hg (Ref.2)
K	= 1.11 (yr^{-1}) (Ref.1)	LEL	= 0.8% (Ref. 2)

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

XYLENES

Aqueous Solubility (AS)

Organic Carbon Coefficient (Koc)

Degradation Coefficient (K)

Specific Gravity (SG)

Vapor Pressure (VP)

Lower Explosive Limit (LEL)

Xylenes (total) (CAS 1330-20-7) (Ref. 1)

AS = 175 mg/L (Ref. 1)
Koc = 350 (Ref. 1)
K = 0.69 (yr^{-1}) (Ref. 1)

SG = 0.87 (average) (Ref. 2)
VP = 8.3 mmHg (average) (Ref. 2)
LEL = 1.0% (average) (Ref. 2)

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

MTBE

Aqueous Solubility (AS)	Specific Gravity (SG)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Degradation Coefficient (K)	Lower Explosive Limit (LEL)

Methyl-tert-butyl-ether (CAS 1634-04-4) (Ref. 1)

AS	= 45000 (mg/L) (Ref. 1)	SG	= NL (Ref. 2)
Koc	= 12 (Ref. 1)	VP	= NL (Ref. 2)
K	= 0.693 (yr^{-1}) (Ref. 1)	LEL	= NL (Ref. 2)

NL – Not Listed

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

CUMENE

Aqueous Solubility (AS)	Specific Gravity (SG)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Degradation Coefficient (K)	Lower Explosive Limit (LEL)

Cumene (CAS 98-82-8) (Ref. 1)

AS	= 50 mg/L (Ref. 1)	SG	= 0.86 (Ref. 2)
Koc	= 2800 (Ref. 1)	VP	= 8 mm Hg (Ref. 2)
K	= 15.81 (yr^{-1}) (Ref. 1)	LEL	= 0.9% (Ref. 2)

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

NAPHTHALENE

Aqueous Solubility (AS)	Specific Gravity (SG)
Organic Carbon Coefficient (Koc)	Vapor Pressure (VP)
Degradation Coefficient (K)	Lower Explosive Limit (LEL)

Naphthalene (CAS 91-20-3) (Ref. 1)

AS	= 30 mg/L (Ref. 1)	SG	= 1.15 (Ref. 2)
Koc	= 950 (Ref. 1)	VP	= 0.08 mm Hg (Ref. 2)
K	= 0.98 (yr^{-1}) (Ref. 1)	LEL	= 0.9% (Ref. 2)

References:

1. Department of Environmental Protection, Bureau of Land Recycling and Waste Management, Land Recycling and Cleanup Program. "Title 25. Environmental Protection, Department of Environmental Protection Chapter 250. Administration of Land Recycling Program," November 24, 2001.

2. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institute for Occupational and Health. NIOSH Pocket Guide to Chemical Hazards and Other Databases, Publication No. 2001-145, August 2001.

APPENDIX B

WHITE TOWNSHIP WATER CONNECTION ORDINANCE

§ 311-7. Connection required.

Every owner of property in the Township of White (herein called the "Township") which property has now or hereafter shall have a house, building or other structure located thereon, which house, building or other structure presently uses or in the future will use water for human consumption and which property abuts and which house, building or other structure is located within 150 feet of any portion of the public water supply and distribution system (1992 PennVest Loan — White Township/Center Township, Water Renovation Project VI, as now approved or hereafter incorporated or added to said project) to be constructed on East Pike (SR 1002), Airport Road (SR 1006), Warren Road (SR 3024), Geesey Road and Stormer Road (SR 1001), Hood School Road (SR 1008), Greendale Drive (TR 435), Apache Drive (TR 857), Raymond Drive (TR 740), Brown Road (TR 743) and Barclay Road (TR 480) and such other state and Township roads as are now approved or hereafter incorporated or added to said project in the Township by the Indiana County Municipal Services Authority (hereinafter called the "Authority") in the near future shall provide a connection at the owner's cost to the house, building or other structure located on the property with the aforementioned public water system.

APPENDIX C

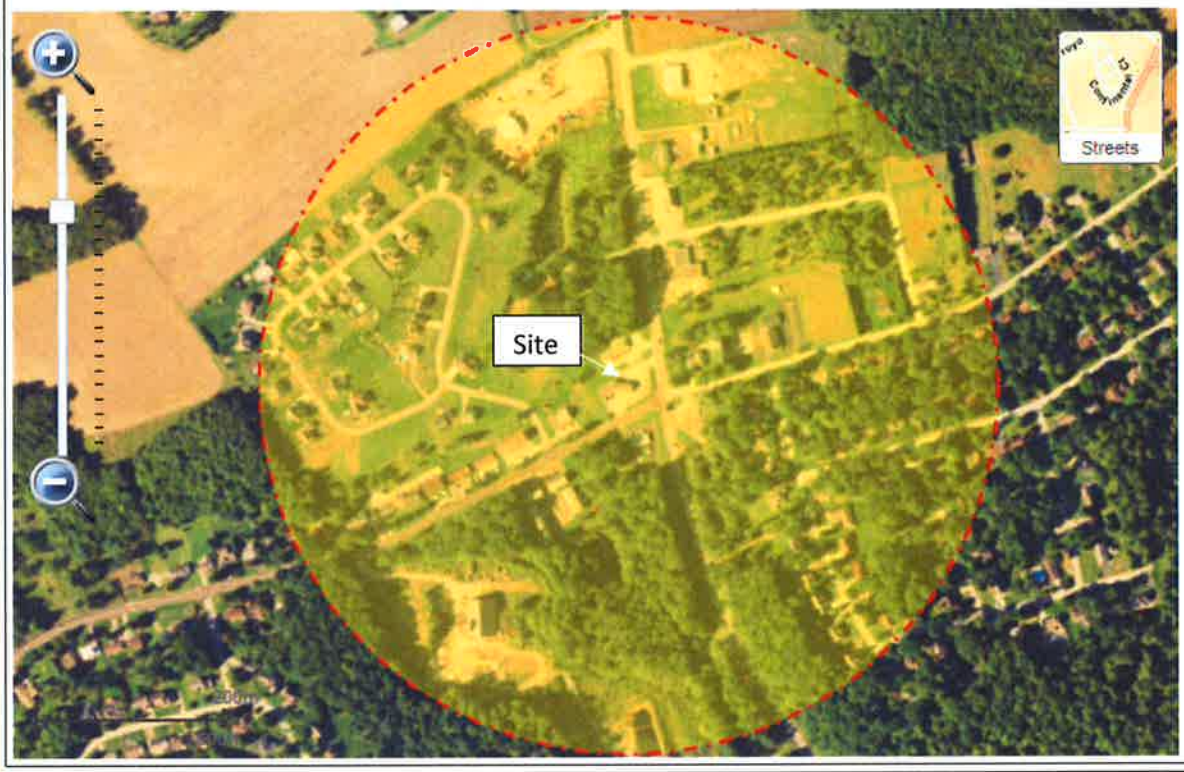
PAGWIS RESULTS

PAGWIS Search Conducted 11/8/2016

4985 lucerne road indiana pa | Go | 40 | -79 | Jump to Point

40.572, -79.130

☐ Include unlocated wells within intersected municipalities Explain



Download Data Package | Clear Selections | Contact Us

'Download Data Package' creates a data package-specific CSV file that you may open or download. If you choose to open the file, it may open in Excel (if you have Microsoft Office installed). Because of the relational nature of the database, there may be more than 1 line per well in the downloaded data. For data on public water supply wells, or water quality data, please see instructions.

Instructions

Total Records To Download : 0 Records

APPENDIX D

EDR REPORT

Vennards Crossroads Convenience
4895 Lucerne Road
Indiana, PA 15701

Inquiry Number: 4456268.2s
November 03, 2015

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

4895 LUCERNE ROAD
INDIANA, PA 15701

COORDINATES

Latitude (North):	40.5759000 - 40° 34' 33.24"
Longitude (West):	79.1331000 - 79° 7' 59.16"
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	658019.8
UTM Y (Meters):	4493143.5
Elevation:	1299 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5950745 INDIANA, PA
Version Date:	2013
East Map:	5950731 BRUSH VALLEY, PA
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20100619
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
4895 LUCERNE ROAD
INDIANA, PA 15701

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	VENNARDS CROSSROADS	4895 LUCERNE RD	UST		TP

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
VENNARDS CROSSROADS 4895 LUCERNE RD INDIANA, PA 15701	UST Site ID: 575990 Tank Status: Currently In Use	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators

RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

SHWS..... Hazardous Sites Cleanup Act Site List
HSCA..... HSCA Remedial Sites Listing

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Operating Facilities

State and tribal leaking storage tank lists

LAST..... Storage Tank Release Sites
LUST..... Storage Tank Release Sites
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
UNREG LTANKS..... Unregulated Tank Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
AST..... Listing of Pennsylvania Regulated Aboveground Storage Tanks
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Controls Site Listing
INST CONTROL..... Institutional Controls Site Listing
AUL..... Environmental Covenants Listing

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Listing
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF..... Abandoned Landfill Inventory
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... National Clandestine Laboratory Register
US CDL..... Clandestine Drug Labs

Local Lists of Registered Storage Tanks

ARCHIVE UST..... Archived Underground Storage Tank Sites
ARCHIVE AST..... Archived Aboveground Storage Tank Sites

Local Land Records

LIENS 2..... CERCLA Lien Information
ACT 2-DEED..... Act 2-Deed Acknowledgment Sites

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... State spills

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data

EXECUTIVE SUMMARY

CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
FINDS..... Facility Index System/Facility Registry System
AIRS..... Permit and Emissions Inventory Data
DRYCLEANERS..... Drycleaner Facility Locations
MANIFEST..... Manifest Information
MINES..... MINES
NPDES..... NPDES Permit Listing
UIC..... Underground Injection Wells

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

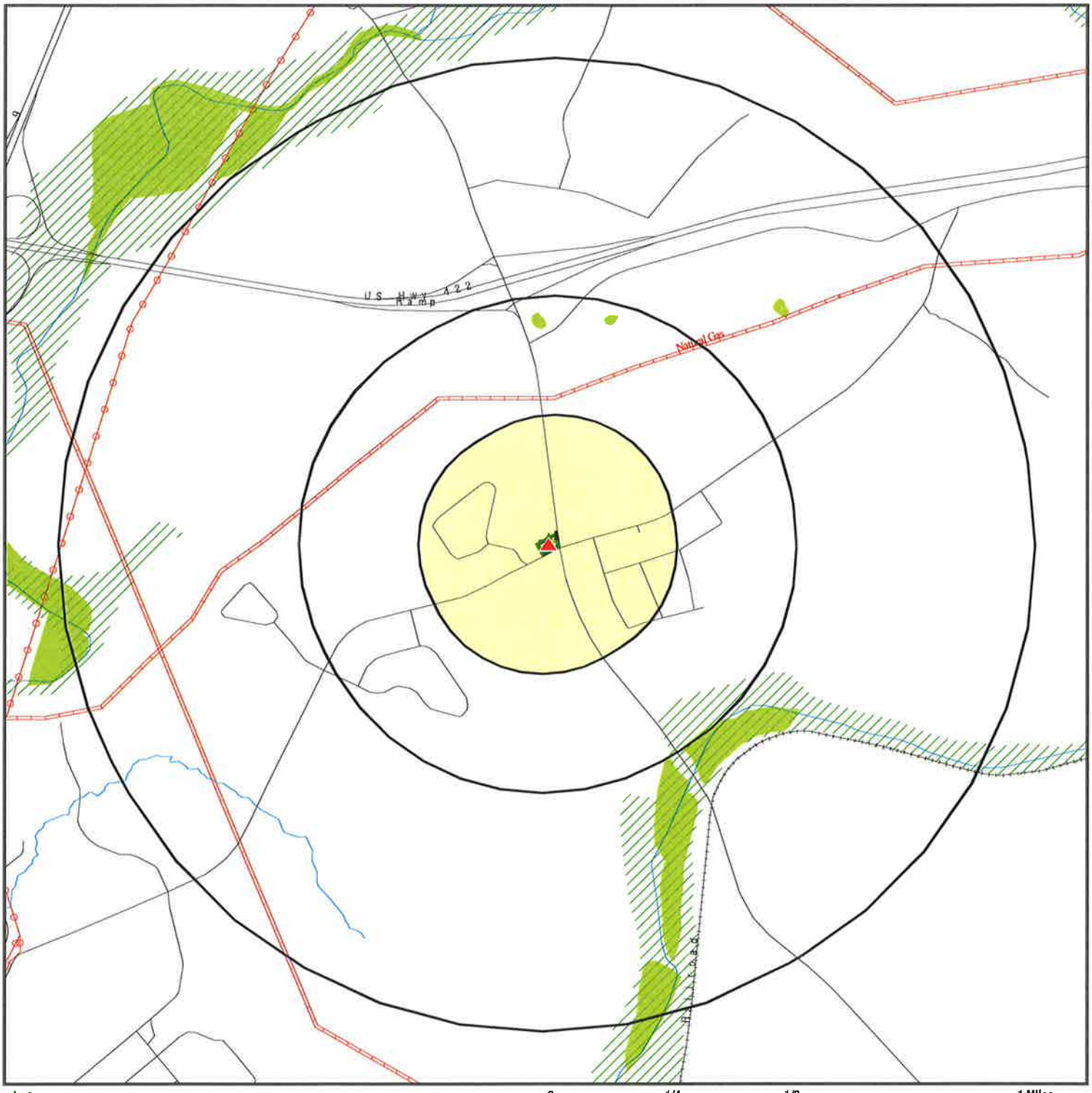
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
NATL MINERALS	LUST

OVERVIEW MAP - 4456268.2S



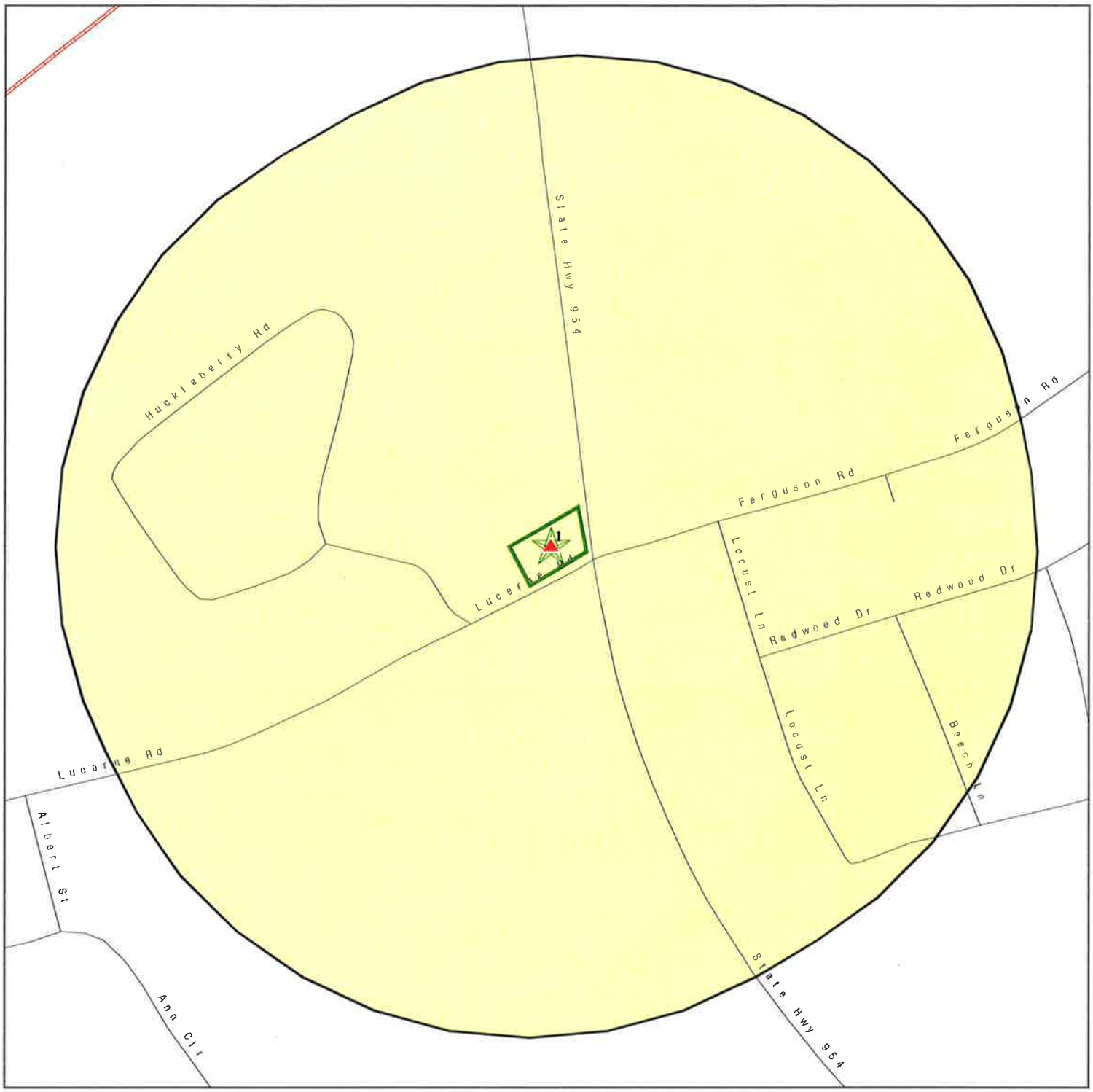
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

0 1/4 1/2 1 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Vennards Crossroads Convenience ADDRESS: 4895 Lucerne Road Indiana PA 15701 LAT/LONG: 40.5759 / 79.1331	CLIENT: Mountain Research, Inc. CONTACT: Ryan T. Hill INQUIRY #: 4456268.2s DATE: November 03, 2015 1:59 pm

DETAIL MAP - 4456268.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Pipelines

100-year flood zone

500-year flood zone

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Vennards Crossroads Convenience	CLIENT: Mountain Research, Inc.
ADDRESS: 4895 Lucerne Road Indiana PA 15701	CONTACT: Ryan T. Hill INQUIRY #: 4456268.2s
LAT/LONG: 40.5759 / 79.1331	DATE: November 03, 2015 2:00 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
CERCLIS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
SHWS	1.000		0	0	0	0	NR	0
HSCA	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LAST	0.500		0	0	0	NR	NR	0
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UNREG LTANKS	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250	1	0	0	NR	NR	NR	1
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
AUL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
ARCHIVE UST	0.250		0	0	NR	NR	NR	0
ARCHIVE AST	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
ACT 2-DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
MANIFEST	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.125		0	NR	NR	NR	NR	0
EDR US Hist Cleaners	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		1	0	0	0	0	0	1

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 Target Property | **VENNARDS CROSSROADS CONVENIENCE**
4895 LUCERNE RD
INDIANA, PA 15701 | **UST** | **U002039587**
N/A

Actual: 1299 ft.

UST:

Site ID:	575990
Other Id:	32-81802
Client Id Number:	168505
Municipality Name:	White
Region:	EP SW Rgnl Off Pittsburgh
Mailing Name:	RICHARD R VENNARD
Mailing Address:	5190 WHITE OAK DR
Mailing Address 2:	Not reported
Mailing City,St,Zip:	INDIANA, PA 15701-9479
Registration Expiration Date:	10/04/2015

Tank Seq No:	001
Tank Status:	**Currently In Use**
Capacity:	6000
Substance:	Gasoline
Date Installed:	03/01/1990
Tank Code:	UST
Inspection Code:	Facility Operation Inspection
Tank Last Dt Inspected:	05/04/2015
Decode for Tstatus:	Currently In Use
Decode for Substance:	Gasoline

Tank Seq No:	002
Tank Status:	**Currently In Use**
Capacity:	4000
Substance:	Gasoline
Date Installed:	03/01/1990
Tank Code:	UST
Inspection Code:	Facility Operation Inspection
Tank Last Dt Inspected:	05/04/2015
Decode for Tstatus:	Currently In Use
Decode for Substance:	Gasoline

Tank Seq No:	003
Tank Status:	**Currently In Use**
Capacity:	2000
Substance:	Diesel Fuel
Date Installed:	03/01/1990
Tank Code:	UST
Inspection Code:	Facility Operation Inspection
Tank Last Dt Inspected:	05/04/2015
Decode for Tstatus:	Currently In Use
Decode for Substance:	Diesel Fuel

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
INDIANA	S105802653	NATL MINERALS	RTE 954 S	15701	LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/26/2015	Source: EPA
Date Data Arrived at EDR: 04/08/2015	Telephone: N/A
Date Made Active in Reports: 06/22/2015	Last EDR Contact: 07/09/2015
Number of Days to Update: 75	Next Scheduled EDR Contact: 10/19/2015
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/08/2015	Telephone: 703-603-8704
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 07/10/2015
Number of Days to Update: 64	Next Scheduled EDR Contact: 10/19/2015
	Data Release Frequency: Varies

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 05/29/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 05/29/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 09/07/2015
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/31/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

SHWS: Hazardous Sites Cleanup Act Site List

The Hazardous Sites Cleanup Act Site List includes sites listed on PA Priority List, sites delisted from PA Priority List, Interim Response Completed sites, and Sites Being Studied or Response Being Planned.

Date of Government Version: 07/21/2015
Date Data Arrived at EDR: 07/21/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 28

Source: Department Environmental Protection
Telephone: 717-783-7816
Last EDR Contact: 07/21/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Semi-Annually

HSCA: HSCA Remedial Sites Listing
A list of remedial sites on the PA Priority List. This is the PA state equivalent of the federal NPL superfund list.

Date of Government Version: 04/16/2015
Date Data Arrived at EDR: 07/21/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 28

Source: Department of Environmental Protection
Telephone: 717-783-7816
Last EDR Contact: 07/21/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Varies

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Operating Facilities
The listing includes Municipal Waste Landfills, Construction/Demolition Waste Landfills and Waste-to-Energy Facilities.

Date of Government Version: 08/24/2015
Date Data Arrived at EDR: 08/27/2015
Date Made Active in Reports: 10/08/2015
Number of Days to Update: 42

Source: Department of Environmental Protection
Telephone: 717-787-7564
Last EDR Contact: 08/24/2015
Next Scheduled EDR Contact: 12/07/2015
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LAST: Storage Tank Release Sites
Leaking Aboveground Storage Tank Incident Reports.

Date of Government Version: 09/14/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 09/16/2015
Next Scheduled EDR Contact: 12/28/2015
Data Release Frequency: Semi-Annually

LUST: Storage Tank Release Sites
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/14/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 09/16/2015
Next Scheduled EDR Contact: 12/28/2015
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 07/28/2015
Date Data Arrived at EDR: 08/07/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 67

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/13/2015
Date Data Arrived at EDR: 08/03/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 71

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 07/21/2015
Date Data Arrived at EDR: 07/29/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 76

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 07/30/2015
Date Data Arrived at EDR: 08/07/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 67

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

UNREG LTANKS: Unregulated Tank Cases
Leaking storage tank cases from unregulated storage tanks.

Date of Government Version: 04/12/2002
Date Data Arrived at EDR: 08/14/2003
Date Made Active in Reports: 08/29/2003
Number of Days to Update: 15

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 08/14/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

UST: Listing of Pennsylvania Regulated Underground Storage Tanks
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 09/16/2015
Next Scheduled EDR Contact: 12/28/2015
Data Release Frequency: Varies

AST: Listing of Pennsylvania Regulated Aboveground Storage Tanks
Registered Aboveground Storage Tanks.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 09/16/2015
Next Scheduled EDR Contact: 12/28/2015
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 07/30/2015
Date Data Arrived at EDR: 08/07/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 67

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 07/28/2015
Date Data Arrived at EDR: 08/07/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 67

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 07/21/2015
Date Data Arrived at EDR: 07/29/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 76

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/13/2015
Date Data Arrived at EDR: 08/03/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 71

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/28/2015
Date Data Arrived at EDR: 08/14/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 60

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Controls Site Listing
Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/15/2008
Date Data Arrived at EDR: 05/16/2008
Date Made Active in Reports: 06/12/2008
Number of Days to Update: 27

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: No Update Planned

AUL: Environmental Covenants Listing
A listing of sites with environmental covenants.

Date of Government Version: 07/21/2015
Date Data Arrived at EDR: 07/21/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 28

Source: Department of Environmental Protection
Telephone: 717-783-7509
Last EDR Contact: 07/21/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Varies

INST CONTROL: Institutional Controls Site Listing
Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/15/2008
Date Data Arrived at EDR: 05/16/2008
Date Made Active in Reports: 06/12/2008
Number of Days to Update: 27

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: No Update Planned

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Sites
The VCP listings included Completed Sites, Sites in Progress and Act 2 Non-Use Aquifer Determinations Sites. Formerly known as the Act 2, the Land Recycling Program encourages the voluntary cleanup and reuse of contaminated commercial and industrial sites.

Date of Government Version: 07/14/2015
Date Data Arrived at EDR: 07/15/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 34

Source: Department of Environmental Protection
Telephone: 717-783-2388
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites

Brownfields are generally defined as abandoned or underused industrial or commercial properties where redevelopment is complicated by actual or perceived environmental contamination. Brownfields vary in size, location, age and past use. They can range from a small, abandoned corner gas station to a large, multi-acre former manufacturing plant that has been closed for years.

Date of Government Version: 07/15/2015
Date Data Arrived at EDR: 07/20/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 29

Source: Department of Environmental Protection
Telephone: 717-783-1566
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/24/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/24/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF ALI: Abandoned Landfill Inventory

The report provides facility information recorded in the Pennsylvania Department of Environmental Protection ALI database. Some of this information has been abstracted from old records and may not accurately reflect the current conditions and status at these facilities

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/04/2005
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 717-787-7564
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

HIST LF INVENTORY: Facility Inventory

A listing of solid waste facilities. This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP?s name was the Department of Environmental Resources.

Date of Government Version: 06/02/1999
Date Data Arrived at EDR: 07/12/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 717-787-7381
Last EDR Contact: 09/19/2005
Next Scheduled EDR Contact: 12/19/2005
Data Release Frequency: No Update Planned

HIST LF INACTIVE: Inactive Facilities List

A listing of inactive non-hazardous facilities (10000 & 300000 series). This listing is no longer updated or maintained by the Department of Environmental Protection. At the time the listing was available, the DEP?s name was the Department of Environmental Resources.

Date of Government Version: 12/20/1994
Date Data Arrived at EDR: 07/12/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 717-787-7381
Last EDR Contact: 06/21/2005
Next Scheduled EDR Contact: 12/19/2005
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 06/01/2015
Date Data Arrived at EDR: 06/02/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 106

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/15/2015
Date Data Arrived at EDR: 06/02/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 106

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/31/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

ARCHIVE UST: Archived Underground Storage Tank Sites

The list includes tanks storing highly hazardous substances that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 09/16/2015
Next Scheduled EDR Contact: 12/28/2015
Data Release Frequency: Varies

ARCHIVE AST: Archived Aboveground Storage Tank Sites

The list includes aboveground tanks with a capacity greater than 21,000 gallons that were removed from the DEP's Storage Tank Information database because of the Department's policy on sensitive information. The list also may include tanks that are removed or permanently closed.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-772-5599
Last EDR Contact: 09/16/2015
Next Scheduled EDR Contact: 12/28/2015
Data Release Frequency: Varies

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

ACT 2-DEED: Act 2-Deed Acknowledgment Sites

This listing pertains to sites where the Department has approved a cleanup requiring a deed acknowledgment under Act 2. This list includes sites remediated to a non-residential Statewide health standard (Section 303(g)); all sites demonstrating attainment of a Site-specific standard (Section 304(m)); and sites being remediated as a special industrial area (Section 305(g)). Persons who remediated a site to a standard that requires a deed acknowledgment shall comply with the requirements of the Solid Waste Management Act or the Hazardous Sites Cleanup Act, as referenced in Act 2. These statutes require a property description section in the deed concerning the hazardous substance disposal on the site. The location of disposed hazardous substances and a description of the type of hazardous substances disposed on the site shall be included in the deed acknowledgment. A deed acknowledgment is required at the time of conveyance of the property.

Date of Government Version: 04/23/2010
Date Data Arrived at EDR: 04/28/2010
Date Made Active in Reports: 04/30/2010
Number of Days to Update: 2

Source: Department of Environmental Protection
Telephone: 717-783-9470
Last EDR Contact: 07/22/2011
Next Scheduled EDR Contact: 11/07/2011
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

SPILLS: State spills
A listing of hazardous material incidents.

Date of Government Version: 08/11/2015
Date Data Arrived at EDR: 08/14/2015
Date Made Active in Reports: 09/08/2015
Number of Days to Update: 25

Source: DEP, Emergency Response
Telephone: 717-787-5715
Last EDR Contact: 08/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/09/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 800-438-2474
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/11/2015
Next Scheduled EDR Contact: 12/21/2015
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/01/2015
Date Data Arrived at EDR: 06/02/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/12/2015
Next Scheduled EDR Contact: 11/30/2015
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/23/2015
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/25/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/17/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/26/2015
Date Data Arrived at EDR: 07/10/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 95

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/03/2015
Next Scheduled EDR Contact: 12/21/2015
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 07/31/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/04/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

BRS: Biennial Reporting System
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/28/2015
Next Scheduled EDR Contact: 12/07/2015
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 07/07/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 07/22/2015
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 40

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 07/22/2015
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 40

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/22/2015
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/14/2015
Date Data Arrived at EDR: 06/03/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 91

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/01/2015
Next Scheduled EDR Contact: 12/14/2015
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (215) 814-5000
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

AIRS: Permit and Emissions Inventory Data
Permit and emissions inventory data.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/22/2014
Date Made Active in Reports: 09/17/2014
Number of Days to Update: 57

Source: Department of Environmental Protection
Telephone: 717-787-9702
Last EDR Contact: 06/23/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

DRYCLEANERS: Drycleaner Facility Locations
A listing of drycleaner facility locations.

Date of Government Version: 09/21/2015
Date Data Arrived at EDR: 09/22/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 20

Source: Department of Environmental Protection
Telephone: 717-787-9702
Last EDR Contact: 09/21/2015
Next Scheduled EDR Contact: 01/04/2016
Data Release Frequency: Varies

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/20/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Annually

MINES: Abandoned Mine Land Inventory
This data set portrays the approximate location of Abandoned Mine Land Problem Areas containing public health, safety, and public welfare problems created by past coal mining.

Date of Government Version: 07/02/2015
Date Data Arrived at EDR: 07/28/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 21

Source: PASDA
Telephone: 814-863-0104
Last EDR Contact: 07/28/2015
Next Scheduled EDR Contact: 11/09/2015
Data Release Frequency: Semi-Annually

NPDES: NPDES Permit Listing
A listing of facilities with an NPDES permit.

Date of Government Version: 03/28/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 08/05/2014
Number of Days to Update: 54

Source: Department of Environmental Protection
Telephone: 717-787-9642
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

UIC: Underground Injection Wells
A listing of underground injection well locations.

Date of Government Version: 09/22/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 10/12/2015
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: 717-783-7209
Last EDR Contact: 09/23/2015
Next Scheduled EDR Contact: 01/04/2016
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: Department Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/10/2014
Number of Days to Update: 193

Source: Department Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: Department Environmental Protection
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/06/2015
Date Made Active in Reports: 08/24/2015
Number of Days to Update: 18

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/06/2015
Next Scheduled EDR Contact: 11/16/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data
Hazardous waste manifest information.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 06/03/2015
Date Made Active in Reports: 07/20/2015
Number of Days to Update: 47

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 07/20/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Telephone: 281-546-1505
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: 800-823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facility List
Source: Department of Public Welfare
Telephone: 717-783-3856

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

VENNARDS CROSSROADS CONVENIENCE
4895 LUCERNE ROAD
INDIANA, PA 15701

TARGET PROPERTY COORDINATES

Latitude (North):	40.5759 - 40° 34' 33.24"
Longitude (West):	79.1331 - 79° 7' 59.16"
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	658019.8
UTM Y (Meters):	4493143.5
Elevation:	1299 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5950745 INDIANA, PA
Version Date:	2013
East Map:	5950731 BRUSH VALLEY, PA
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

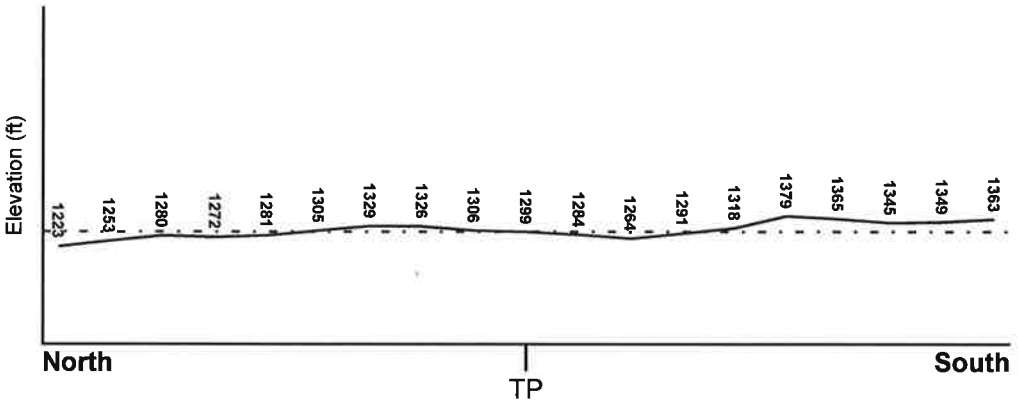
TOPOGRAPHIC INFORMATION

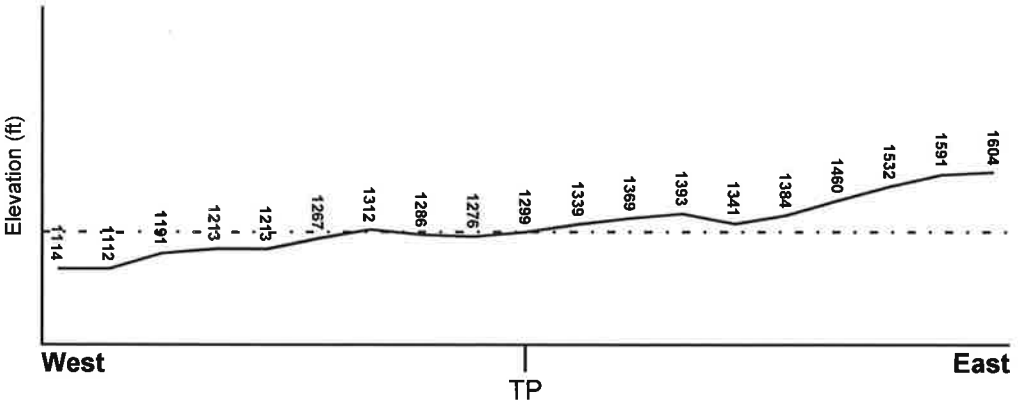
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1299 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
INDIANA, PA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	4217250015A - FEMA Q3 Flood data
Additional Panels in search area:	4217100025A - FEMA Q3 Flood data 4204960002D - FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
INDIANA	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

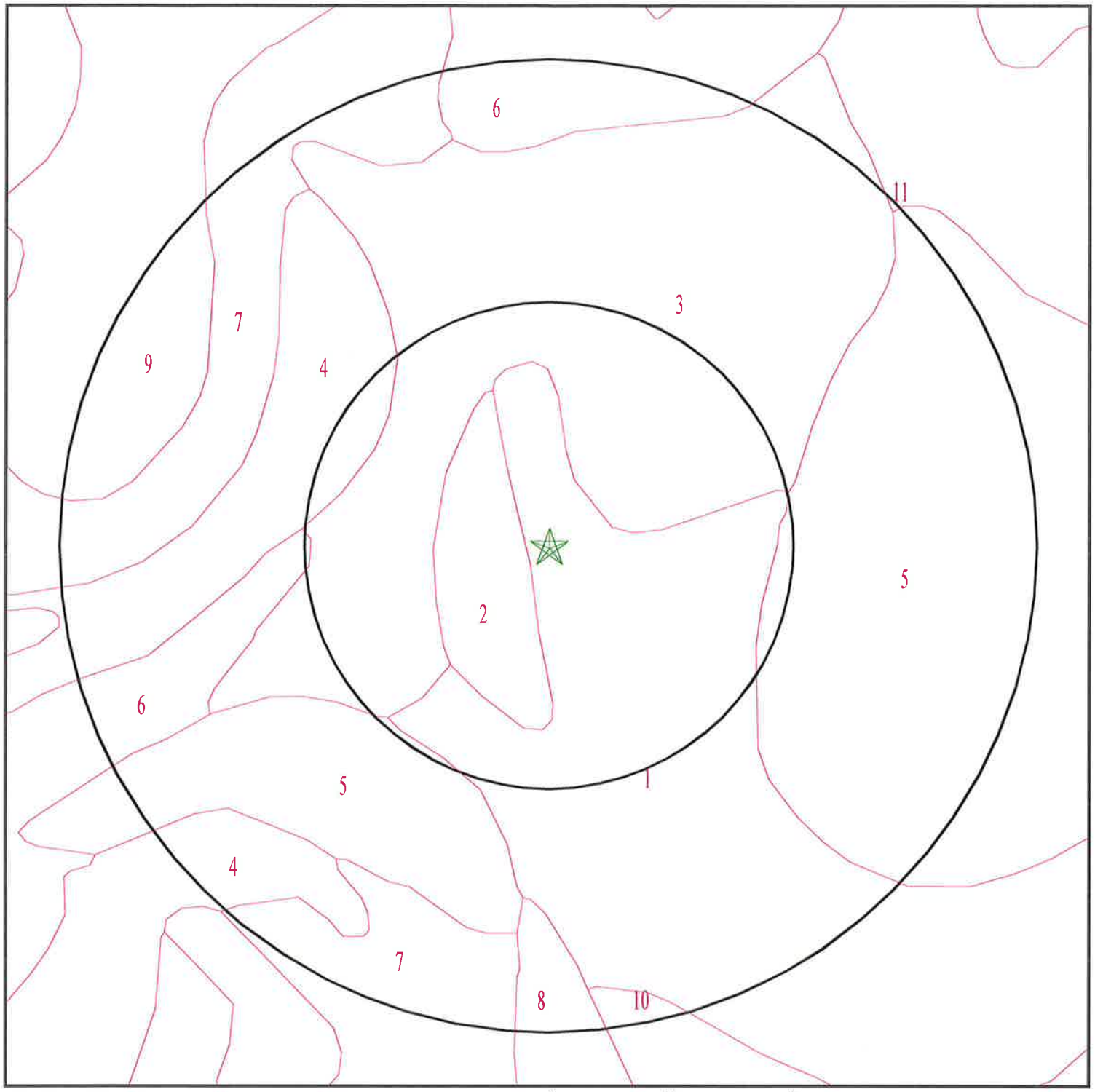
Era:	Paleozoic
System:	Pennsylvanian
Series:	Des Moinesian Series
Code:	PP2 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4456268.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME: Vennards Crossroads Convenience ADDRESS: 4895 Lucerne Road Indiana PA 15701 LAT/LONG: 40.5759 / 79.1331	CLIENT: Mountain Research, Inc. CONTACT: Ryan T. Hill INQUIRY #: 4456268.2s DATE: November 03, 2015 2:00 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Dekalb

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 76 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 42.34	Max: 6.5 Min: 3.6
2	7 inches	22 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 141.14 Min: 42.34	Max: 5.5 Min: 3.6
3	22 inches	26 inches	flaggy sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 141.14 Min: 42.34	Max: 5.5 Min: 3.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	26 inches	37 inches	unweathered bedrock	Not reported	Not reported	Max: 42 Min: 4	Max: Min:

Soil Map ID: 2

Soil Component Name: Brinkerton

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 8 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	9 inches	16 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
3	16 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 1.41 Min: 0.42	Max: 6 Min: 4.5

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	25 inches	59 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4.23 Min: 0.42	Max: 6.5 Min: 5.1

Soil Map ID: 3

Soil Component Name: Cookport

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 112 inches

Depth to Watertable Min: > 40 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	9 inches	14 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	14 inches	38 inches	channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.41 Min: 0.42	Max: 5.5 Min: 3.6
4	38 inches	44 inches	channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4.23 Min: 1.41	Max: 5.5 Min: 3.6
5	44 inches	46 inches	unweathered bedrock	Not reported	Not reported	Max: 4.23 Min: 0.1	Max: Min:

Soil Map ID: 4

Soil Component Name: Gilpin

Soil Surface Texture: channery silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	7 inches	24 inches	channery silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
3	24 inches	29 inches	very channery silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
4	29 inches	33 inches	unweathered bedrock	Not reported	Not reported	Max: 14.11 Min: 1.41	Max: Min:

Soil Map ID: 5

Soil Component Name: Clymer

Soil Surface Texture: channery loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 120 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
2	7 inches	35 inches	channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
3	35 inches	40 inches	very channery sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
4	40 inches	53 inches	weathered bedrock	Not reported	Not reported	Max: 42.34 Min: 14.11	Max: Min:

Soil Map ID: 6

Soil Component Name: Ernest

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 69 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	9 inches	16 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
3	16 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.23 Min: 0.42	Max: 5.5 Min: 4.5
4	25 inches	51 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.23 Min: 0.42	Max: 5.5 Min: 4.5

Soil Map ID: 7

Soil Component Name: Gilpin

Soil Surface Texture: channery silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
2	7 inches	24 inches	channery silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
3	24 inches	29 inches	very channery silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
4	29 inches	33 inches	unweathered bedrock	Not reported	Not reported	Max: 14.11 Min: 1.41	Max: Min:

Soil Map ID: 8

Soil Component Name: Dekalb

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 76 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141.14 Min: 42.34	Max: 6.5 Min: 3.6
2	7 inches	22 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 141.14 Min: 42.34	Max: 5.5 Min: 3.6
3	22 inches	26 inches	flaggy sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 141.14 Min: 42.34	Max: 5.5 Min: 3.6
4	26 inches	37 inches	unweathered bedrock	Not reported	Not reported	Max: 42 Min: 4	Max: Min:

Soil Map ID: 9

Soil Component Name: Wharton

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 69 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4
2	9 inches	37 inches	channery silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4.23 Min: 0.42	Max: 5.5 Min: 4
3	37 inches	68 inches	channery silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 4.23 Min: 0.42	Max: 5.5 Min: 4
4	68 inches	72 inches	weathered bedrock	Not reported	Not reported	Max: 4.34 Min: 0	Max: Min:

Soil Map ID: 10

Soil Component Name: Ernest

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 69 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	9 inches	16 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
3	16 inches	25 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.23 Min: 0.42	Max: 5.5 Min: 4.5
4	25 inches	51 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.23 Min: 0.42	Max: 5.5 Min: 4.5

Soil Map ID: 11

Soil Component Name: Gilpin

Soil Surface Texture: channery silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	channery silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
2	7 inches	24 inches	channery silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
3	24 inches	29 inches	very channery silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 14.11 Min: 4.23	Max: 5.5 Min: 3.6
4	29 inches	33 inches	unweathered bedrock	Not reported	Not reported	Max: 14.11 Min: 1.41	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	PASI50000114897	1/4 - 1/2 Mile North
A2	SPAW0070439	1/4 - 1/2 Mile North
B3	PASI50000114932	1/4 - 1/2 Mile ENE
B4	SPAW0070474	1/2 - 1 Mile ENE
5	PASI50000395280	1/2 - 1 Mile North
C6	SPAW0070459	1/2 - 1 Mile NW
C7	PASI50000114917	1/2 - 1 Mile NW
D8	SPAW0070486	1/2 - 1 Mile NW
D9	PASI50000114944	1/2 - 1 Mile NW

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

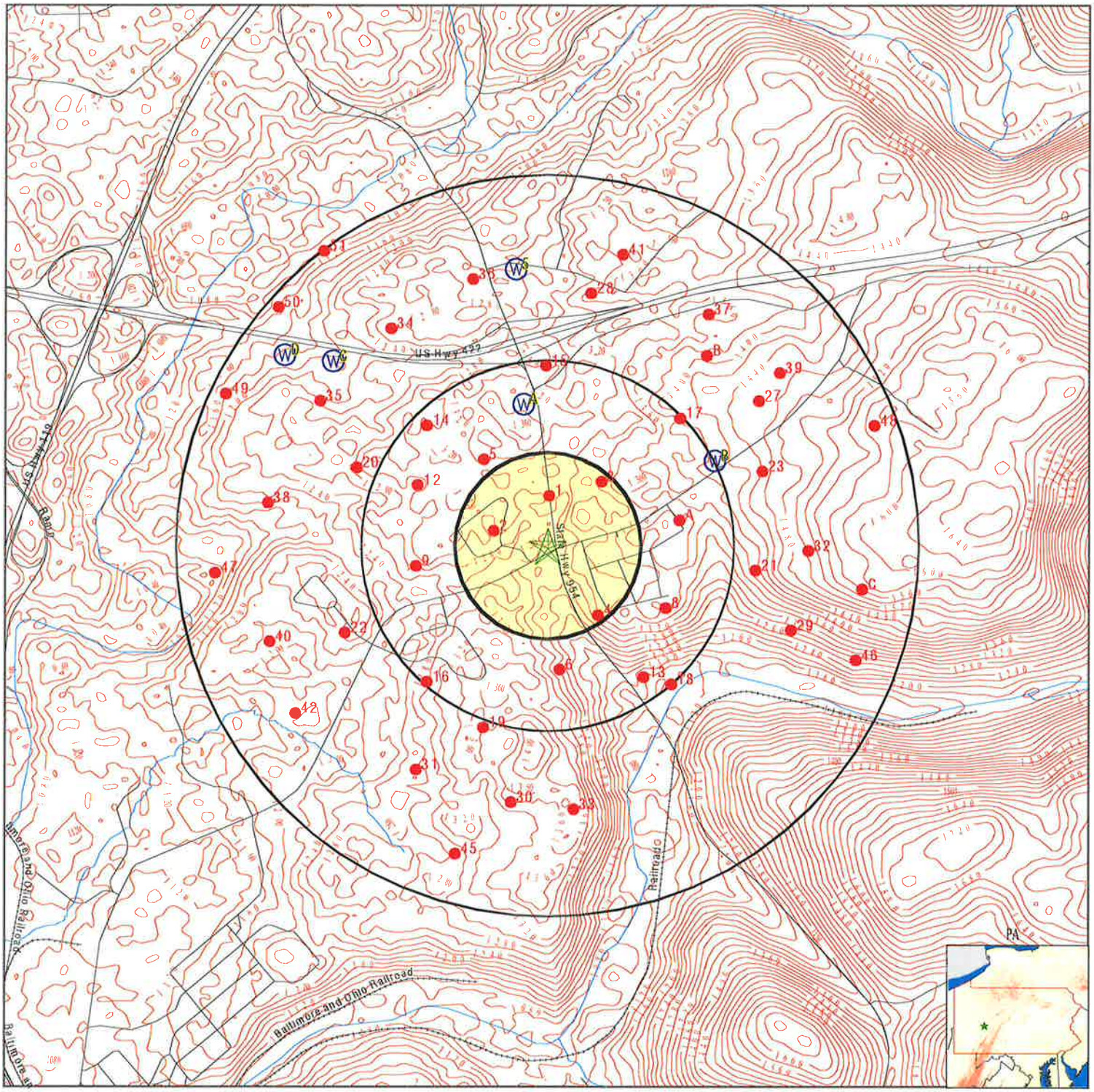
MAP ID	WELL ID	LOCATION FROM TP
1	PAOG60000074382	1/8 - 1/4 Mile North
2	PAOG60000057490	1/8 - 1/4 Mile WNW
3	PAOG60000132304	1/8 - 1/4 Mile NE
4	PAOG60000048014	1/8 - 1/4 Mile SE
5	PAOG60000155463	1/4 - 1/2 Mile NW
6	PAOG60000105164	1/4 - 1/2 Mile South
A7	PAOG60000073426	1/4 - 1/2 Mile ENE
8	PAOG60000045651	1/4 - 1/2 Mile ESE
9	PAOG60000040671	1/4 - 1/2 Mile West
A11	PAOG60000127840	1/4 - 1/2 Mile East
A10	PAOG60000127548	1/4 - 1/2 Mile East
12	PAOG60000027037	1/4 - 1/2 Mile WNW
13	PAOG60000128397	1/4 - 1/2 Mile SE
14	PAOG60000073935	1/4 - 1/2 Mile NW
15	PAOG60000114942	1/4 - 1/2 Mile North
16	PAOG60000115677	1/4 - 1/2 Mile SW
17	PAOG60000065759	1/4 - 1/2 Mile NE
18	PAOG60000110754	1/4 - 1/2 Mile SE
19	PAOG60000127533	1/2 - 1 Mile SSW
20	PAOG60000008681	1/2 - 1 Mile WNW
21	PAOG60000105664	1/2 - 1 Mile East
22	PAOG60000115674	1/2 - 1 Mile WSW
23	PAOG60000082575	1/2 - 1 Mile ENE
B25	PAOG60000139666	1/2 - 1 Mile NE
B26	PAOG60000139667	1/2 - 1 Mile NE
B24	PAOG60000005791	1/2 - 1 Mile NE
27	PAOG60000048013	1/2 - 1 Mile NE
28	PAOG60000115683	1/2 - 1 Mile North
29	PAOG60000058510	1/2 - 1 Mile ESE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
30	PAOG60000103332	1/2 - 1 Mile South
31	PAOG60000000423	1/2 - 1 Mile SSW
32	PAOG60000079475	1/2 - 1 Mile East
33	PAOG60000019873	1/2 - 1 Mile South
34	PAOG60000010064	1/2 - 1 Mile NW
35	PAOG60000105126	1/2 - 1 Mile WNW
36	PAOG60000030150	1/2 - 1 Mile NNW
37	PAOG60000142559	1/2 - 1 Mile NE
38	PAOG60000030141	1/2 - 1 Mile West
39	PAOG60000009372	1/2 - 1 Mile NE
40	PAOG60000115180	1/2 - 1 Mile WSW
41	PAOG60000047294	1/2 - 1 Mile NNE
42	PAOG60000057277	1/2 - 1 Mile WSW
C43	PAOG60000058017	1/2 - 1 Mile East
C44	PAOG60000127148	1/2 - 1 Mile East
45	PAOG60000040711	1/2 - 1 Mile SSW
46	PAOG60000143539	1/2 - 1 Mile ESE
47	PAOG60000122036	1/2 - 1 Mile West
48	PAOG60000048017	1/2 - 1 Mile ENE
49	PAOG60000067829	1/2 - 1 Mile WNW
50	PAOG60000121529	1/2 - 1 Mile NW
51	PAOG60000020149	1/2 - 1 Mile NW

PHYSICAL SETTING SOURCE MAP - 4456268.2s



County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
Oil, gas or related wells

SITE NAME: Vennards Crossroads Convenience ADDRESS: 4895 Lucerne Road Indiana PA 15701 LAT/LONG: 40.5759 / 79.1331	CLIENT: Mountain Research, Inc. CONTACT: Ryan T. Hill INQUIRY #: 4456268.2s DATE: November 03, 2015 2:00 pm

Map ID Direction Distance Elevation		Database	EDR ID Number
A1 **North** **1/4 - 1/2 Mile** **Higher**		**PA WELLS**	**PASI50000114897**

Objectid:	114897	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	1130N	Countycode:	063
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	321GLNS	Topographycode:	S
Welldepth:	85	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	05010007	Latlongaccuracyc:	M
Quadcode:	1412	Typeofsitecode:	W
Datecreated:	03-FEB-99	Dateupdated:	04-FEB-99
Datareliabilityc:	L	Sourcedepthdatac:	D
Municipalitycode:	32937		
Latitudedd:	40.5813888888889		
Longitudedd:	-79.1344444444445		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	15
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	01-SEP-84	Pagwis id:	115000
Sourcesitedataco:	2	Localpermit:	Not Reported
Latestowner:	114256	Driller scoordme:	0
Latestproduction:	115407	Latestwelluse:	117041
Site id:	PASI50000114897	GeneralCounter:	119096

A2 **North** **1/4 - 1/2 Mile** **Higher**		**PA WELLS**	**SPAW0070439**

Well ID:	1130N		
Owner's Name:	LAWER M	County	INDIANA
Latitude:	403453	Longitude:	790804
Quadrangle:	INDIANA	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Hydrologic Unit:	05010007	Topographic Setting:	HILLSIDE
Water Usage:	DOMESTIC	Site Usage:	Not Reported
Well Depth:	85	Finish:	OPEN HOLE
Casing 1:	60	Casing1 Diameter(inches):	6
Casing2:	Not Reported	Casing2 Diameter(inches):	Not Reported
Grouted:	Not Reported	Date Drilled:	09-00-84
Static Water Level:	Not Reported	Production WL:	Not Reported
Yield (gpm):	15	Yield Measurement Method:	Not Reported
Drawdown:	Not Reported	Test Time:	Not Reported
Bedrock:	15	Driller:	1043
Water Bearing Zone 1:	76	Water Bearing Zone 2:	Not Reported
Water Bearing Zone 3:	Not Reported	Lithology:	SANDSTONE
Municipality:	WHITE	Remark:	Not Reported
Aquifer:	GLENSHAW FORMATION		

Map ID Direction Distance Elevation	Database	EDR ID Number
B3 **ENE** **1/4 - 1/2 Mile** **Higher**	**PA WELLS**	**PASI50000114932**

Objectid:	114932	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	1165N	Countycode:	063
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	321GLNS	Topographycode:	S
Welldepth:	124	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	05010007	Latlongaccuracyc:	M
Quadcode:	1413	Typeofsitecode:	W
Datecreated:	03-FEB-99	Dateupdated:	04-FEB-99
Datareliabilityc:	L	Sourcedepthdatac:	D
Municipalitycode:	32937		
Latitudedd:	40.5791666666667		
Longitudedd:	-79.1247222222222		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	10-JUN-75	Pagwis id:	115035
Sourcesitedataco:	2	Localpermit:	Not Reported
Latestowner:	114291	Driller scoordme:	0
Latestproduction:	115442	Latestwelluse:	0
Site id:	PASI50000114932	GeneralCounter:	119131

B4 **ENE** **1/2 - 1 Mile** **Higher**	**PA WELLS**	**SPAW0070474**

Well ID:	1165N		
Owner's Name:	PATTERSON THOMAS	County	INDIANA
Latitude:	403445	Longitude:	790729
Quadrangle:	BRUSH VALLEY	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Hydrologic Unit:	05010007	Topographic Setting:	HILLSIDE
Water Usage:	Not Reported	Site Usage:	Not Reported
Well Depth:	124	Finish:	Not Reported
Casing 1:	20	Casing1 Diameter(inches):	6
Casing2:	Not Reported	Casing2 Diameter(inches):	Not Reported
Grouted:	Not Reported	Date Drilled:	06-10-75
Static Water Level:	50	Production WL:	Not Reported
Yield (gpm):	10	Yield Measurement Method:	E
Drawdown:	Not Reported	Test Time:	Not Reported
Bedrock:	Not Reported	Driller:	1369
Water Bearing Zone 1:	50	Water Bearing Zone 2:	86
Water Bearing Zone 3:	Not Reported	Lithology:	SHALE
Municipality:	WHITE	Remark:	Not Reported
Aquifer:	GLENSHAW FORMATION		

Map ID Direction Distance Elevation	Database	EDR ID Number
5 **North** **1/2 - 1 Mile** **Lower**	**PA WELLS**	**PASI50000395280**

Objectid:	395280	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	Not Reported	Countycode:	063
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	Not Reported	Topographycode:	Not Reported
Welldepth:	142	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	Not Reported	Latlongaccuracyc:	Not Reported
Quadcode:	0	Typeofsitecode:	W
Datecreated:	02-SEP-11	Dateupdated:	Not Reported
Datareliabilityc:	Not Reported	Sourcedepthdatac:	Not Reported
Municipalitycode:	Not Reported		
Latitudedd:	40.5867		
Longitudedd:	-79.13475		
Welladdress:	420 Risinger Road Indiana, PA		
Wellzipcode:	15701	Depthtobedrock:	0
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	31-AUG-11	Pagwis id:	0
Sourcesitedataco:	3	Localpermit:	Not Reported
Latestowner:	7461806	Driller scoordme:	1
Latestproduction:	4486862	Latestwelluse:	7180060
Site id:	PASI50000395280	GeneralCounter:	488538

C6 **NW** **1/2 - 1 Mile** **Lower**	**PA WELLS**	**SPAW0070459**

Well ID:	1150N		
Owner's Name:	CORATOMIC INC	County	INDIANA
Latitude:	403459	Longitude:	790839
Quadrangle:	INDIANA	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Hydrologic Unit:	05010007	Topographic Setting:	HILLSIDE
Water Usage:	INDUSTRIAL	Site Usage:	Not Reported
Well Depth:	165	Finish:	OTHER
Casing 1:	20	Casing1 Diameter(inches):	6
Casing2:	Not Reported	Casing2 Diameter(inches):	Not Reported
Grouted:	Not Reported	Date Drilled:	06-22-79
Static Water Level:	Not Reported	Production WL:	Not Reported
Yield (gpm):	5.5	Yield Measurement Method:	V
Drawdown:	Not Reported	Test Time:	Not Reported
Bedrock:	12	Driller:	1043
Water Bearing Zone 1:	135	Water Bearing Zone 2:	Not Reported
Water Bearing Zone 3:	Not Reported	Lithology:	LIMESTONE
Municipality:	WHITE	Remark:	Not Reported
Aquifer:	GLENSHAW FORMATION		

Map ID Direction Distance Elevation	Database	EDR ID Number
C7 **NW** **1/2 - 1 Mile** **Lower**	**PA WELLS**	**PASI50000114917**

Objectid:	114917	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	1150N	Countycode:	063
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	321GLNS	Topographycode:	S
Welldepth:	165	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	05010007	Latlongaccuracyc:	M
Quadcode:	1412	Typeofsitecode:	W
Datecreated:	03-FEB-99	Dateupdated:	04-FEB-99
Datareliabilityc:	L	Sourcedepthdatac:	D
Municipalitycode:	32937		
Latitudedd:	40.5830555555556		
Longitudedd:	-79.1441666666667		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	12
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	22-JUN-79	Pagwis id:	115020
Sourcesitedataco:	2	Localpermit:	Not Reported
Latestowner:	114276	Driller scoordme:	0
Latestproduction:	115427	Latestwelluse:	117061
Site id:	PASI50000114917	GeneralCounter:	119116

D8 **NW** **1/2 - 1 Mile** **Lower**	**PA WELLS**	**SPAW0070486**

Well ID:	1177N		
Owner's Name:	MOREAY A F	County	INDIANA
Latitude:	403500	Longitude:	790848
Quadrangle:	INDIANA	Lat/Long Accuracy:	ACCURATE TO +1 MINUTE
Hydrologic Unit:	05010007	Topographic Setting:	HILLSIDE
Water Usage:	Not Reported	Site Usage:	WITHDRAWAL
Well Depth:	85	Finish:	Not Reported
Casing 1:	27	Casing1 Diameter(inches):	6
Casing2:	Not Reported	Casing2 Diameter(inches):	Not Reported
Grouted:	Not Reported	Date Drilled:	12-00-78
Static Water Level:	Not Reported	Production WL:	Not Reported
Yield (gpm):	75	Yield Measurement Method:	Not Reported
Drawdown:	Not Reported	Test Time:	Not Reported
Bedrock:	23	Driller:	1043
Water Bearing Zone 1:	47	Water Bearing Zone 2:	64
Water Bearing Zone 3:	Not Reported	Lithology:	SHALE
Municipality:	WHITE	Remark:	Not Reported
Aquifer:	GLENSHAW FORMATION		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
D9 **NW** **1/2 - 1 Mile** **Lower**		**PA WELLS**	**PASI50000114944**

Objectid:	114944	Depcounter:	-1
Siteid:	Not Reported	Transactioncount:	0
Localwellnumber:	1177N	Countycode:	063
Latitude:	Not Reported	Longitude:	Not Reported
Aapgcode:	321GLNS	Topographycode:	S
Welldepth:	85	Elevation:	0
Elevmethodcode:	Not Reported	Accuracyofelevat:	Not Reported
Hydrologicunit:	05010007	Latlongaccuracyc:	M
Quadcode:	1412	Typeofsitecode:	W
Datecreated:	03-FEB-99	Dateupdated:	04-FEB-99
Datareliabilityc:	L	Sourcedepthdatac:	D
Municipalitycode:	32937		
Latitudedd:	40.5833333333333		
Longitudedd:	-79.1466666666667		
Welladdress:	Not Reported		
Wellzipcode:	Not Reported	Depthtobedrock:	23
Bedrocknotreache:	0	Saltwaterzone:	0
Datedrilled:	01-DEC-78	Pagwis id:	115047
Sourcesitedataco:	2	Localpermit:	Not Reported
Latestowner:	114303	Driller scoordme:	0
Latestproduction:	115453	Latestwelluse:	117086
Site id:	PASI50000114944	GeneralCounter:	119143

Map ID Direction Distance	Database	EDR ID Number

1
North
1/8 - 1/4 Mile

OIL_GAS **PAOG60000074382**

Organizati:	XTO ENERGY INC		
Client nam:	XTO ENERGY INC		
Site name:	AC IRWIN 2C479 WELL		
Primary fa:	A C IRWIN 2C479		
Client id:	265476		
Pasite id:	118767		
Primary 1:	120670		
Sub facili:	A C IRWIN 2C479		
Sub faci 1:	76614		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-24922		
Sub faci 2:	Well		
Sother id:	063-24922		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000074382

2
WNW
1/8 - 1/4 Mile

OIL_GAS **PAOG60000057490**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	ROBERT STRONG 3 WELL		
Primary fa:	ROBERT STRONG 3		
Client id:	244896		
Pasite id:	118521		
Primary 1:	120423		
Sub facili:	ROBERT STRONG 3		
Sub faci 1:	76368		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-24663		
Sub faci 2:	Well		
Sother id:	063-24663		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000057490

3
NE
1/8 - 1/4 Mile

OIL_GAS **PAOG60000132304**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	O F HILL 34 1 WELL		
Primary fa:	O F HILL (34) 1		
Client id:	244896		
Pasite id:	117067		
Primary 1:	118967		
Sub facili:	O F HILL (34) 1		
Sub faci 1:	74913		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23167		
Sub faci 2:	Well		
Sother id:	063-23167		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000132304

4
SE **OIL_GAS** **PAOG60000048014**
1/8 - 1/4 Mile

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	ROBERT STRONG 133A 2 WELL		
Primary fa:	ROBERT STRONG (133A) 2		
Client id:	244896		
Pasite id:	121539		
Primary 1:	123445		
Sub facili:	ROBERT STRONG (133A) 2		
Sub faci 1:	79407		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-27803		
Sub faci 2:	Well		
Sother id:	063-27803		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000048014

5
NW **OIL_GAS** **PAOG60000155463**
1/4 - 1/2 Mile

Organizati:	ALLIANCE PETROLEUM CORP
Client nam:	ALLIANCE PETROLEUM CORP
Site name:	O F HILL 40A 2 WELL
Primary fa:	O F HILL (40A) 2
Client id:	244896
Pasite id:	121699
Primary 1:	123605
Sub facili:	O F HILL (40A) 2
Sub faci 1:	79567
Primary 2:	Oil & Gas Location

Primary 3:	NonCoal		
Other faci:	063-27975		
Sub faci 2:	Well		
Sother id:	063-27975		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000155463

6
South **OIL_GAS** **PAOG60000105164**
1/4 - 1/2 Mile

Organizati:	SNYDER BROS INC		
Client nam:	SNYDER BROS INC		
Site name:	CHARLES SNYDER 1 WELL		
Primary fa:	CHARLES SNYDER 1		
Client id:	63561		
Pasite id:	118005		
Primary 1:	119907		
Sub facili:	CHARLES SNYDER 1		
Sub faci 1:	75851		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-24132		
Sub faci 2:	Well		
Sother id:	063-24132		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000105164

A7
ENE **OIL_GAS** **PAOG60000073426**
1/4 - 1/2 Mile

Organizati:	Unavailable		
Client nam:	WALKER J C		
Site name:	H C GRIFFITH 1 WELL		
Primary fa:	H C GRIFFITH 1		
Client id:	70816		
Pasite id:	113996		
Primary 1:	115897		
Sub facili:	H C GRIFFITH 1		
Sub faci 1:	71841		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-20074		
Sub faci 2:	Well		
Sother id:	063-20074		
Client rel:	Owner		
Site statu:	Inactive		
Primary 4:	Plugged OG Well		
Sub faci 3:	361		
Compliance:	YES	Site id:	PAOG60000073426

Map ID Direction Distance	Database	EDR ID Number

8
ESE
1/4 - 1/2 Mile

OIL_GAS **PAOG60000045651**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	R F STRONG 133A 4 WELL		
Primary fa:	R F STRONG (133A) 4		
Client id:	244896		
Pasite id:	121698		
Primary 1:	123604		
Sub facili:	R F STRONG (133A) 4		
Sub faci 1:	79566		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-27974		
Sub faci 2:	Well		
Sother id:	063-27974		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000045651

9
West
1/4 - 1/2 Mile

OIL_GAS **PAOG60000040671**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	CHARLES F SUNDBURG 2 WELL		
Primary fa:	CHARLES F SUNDBURG 2		
Client id:	244896		
Pasite id:	116956		
Primary 1:	118856		
Sub facili:	CHARLES F SUNDBURG 2		
Sub faci 1:	74802		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23057		
Sub faci 2:	Well		
Sother id:	063-23057		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000040671

A11
East
1/4 - 1/2 Mile

OIL_GAS **PAOG60000127840**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	ROBERT STRONG 133A 4 WELL		
Primary fa:	ROBERT STRONG (133A) 4		
Client id:	244896		
Pasite id:	121614		
Primary 1:	123520		
Sub facili:	ROBERT STRONG (133A) 4		
Sub faci 1:	1055661		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-27885		
Sub faci 2:	Well		
Sother id:	063-27885		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000127840

A10
East
1/4 - 1/2 Mile

OIL_GAS **PAOG60000127548**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	ROBERT STRONG 133A 4 WELL		
Primary fa:	ROBERT STRONG (133A) 4		
Client id:	244896		
Pasite id:	121614		
Primary 1:	123520		
Sub facili:	ROBERT STRONG (133A) 4		
Sub faci 1:	79482		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-27885		
Sub faci 2:	Well		
Sother id:	063-27885		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000127548

12
WNW
1/4 - 1/2 Mile

OIL_GAS **PAOG60000027037**

Organizati:	ALLIANCE PETROLEUM CORP
Client nam:	ALLIANCE PETROLEUM CORP
Site name:	O F HILL 40A 3 WELL
Primary fa:	O F HILL (40A) 3
Client id:	244896
Pasite id:	122077
Primary 1:	123984
Sub facili:	O F HILL (40A) 3
Sub faci 1:	79956
Primary 2:	Oil & Gas Location

Primary 3:	Coal		
Other faci:	063-28380		
Sub faci 2:	Well		
Sother id:	063-28380		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000027037

13
SE **OIL_GAS** **PAOG60000128397**
1/4 - 1/2 Mile

Organizati:	EXOTIC OIL & GAS LLC		
Client nam:	EXOTIC OIL & GAS LLC		
Site name:	MYSTIC BROOKE 7 OG WELL		
Primary fa:	MYSTIC BROOKE 7		
Client id:	147590		
Pasite id:	663285		
Primary 1:	673883		
Sub facili:	MYSTIC BROOKE 7		
Sub faci 1:	908301		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-34511		
Sub faci 2:	Well		
Sother id:	063-34511		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000128397

14
NW **OIL_GAS** **PAOG60000073935**
1/4 - 1/2 Mile

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	O F HILL 1 WELL		
Primary fa:	O F HILL 1		
Client id:	244896		
Pasite id:	116955		
Primary 1:	118855		
Sub facili:	O F HILL 1		
Sub faci 1:	74801		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23056		
Sub faci 2:	Well		
Sother id:	063-23056		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000073935

Map ID Direction Distance	Database	EDR ID Number

15
North
1/4 - 1/2 Mile

OIL_GAS **PAOG60000114942**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	HARRY D HILL 1 WELL		
Primary fa:	HARRY D HILL 1		
Client id:	244896		
Pasite id:	117078		
Primary 1:	118979		
Sub facili:	HARRY D HILL 1		
Sub faci 1:	74924		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23178		
Sub faci 2:	Well		
Sother id:	063-23178		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000114942

16
SW
1/4 - 1/2 Mile

OIL_GAS **PAOG60000115677**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	C F SUNDBERG 4C312 WELL		
Primary fa:	C F SUNDBERG 4C312		
Client id:	244896		
Pasite id:	121513		
Primary 1:	123419		
Sub facili:	C F SUNDBERG 4C312		
Sub faci 1:	79381		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-27777		
Sub faci 2:	Well		
Sother id:	063-27777		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000115677

17
NE
1/4 - 1/2 Mile

OIL_GAS **PAOG60000065759**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	HARRY A SHEARER 1 WELL		
Primary fa:	HARRY A SHEARER 1		
Client id:	244896		
Pasite id:	119345		
Primary 1:	121248		
Sub facili:	HARRY A SHEARER 1		
Sub faci 1:	77192		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-25517		
Sub faci 2:	Well		
Sother id:	063-25517		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000065759

18
SE
1/4 - 1/2 Mile

OIL_GAS **PAOG60000110754**

Organizati:	EXOTIC OIL & GAS LLC		
Client nam:	EXOTIC OIL & GAS LLC		
Site name:	MYSTIC BROOKE 7 OG WELL		
Primary fa:	MYSTIC BROOKE 7		
Client id:	147590		
Pasite id:	650351		
Primary 1:	664010		
Sub facili:	MYSTIC BROOKE 7		
Sub faci 1:	845079		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-34166		
Sub faci 2:	Well		
Sother id:	063-34166		
Client rel:	Owner		
Site statu:	Proposed But Never Materialized		
Primary 4:	Operator Reported Not Drilled		
Sub faci 3:	401		
Compliance:	YES	Site id:	PAOG60000110754

19
SSW
1/2 - 1 Mile

OIL_GAS **PAOG60000127533**

Organizati:	XTO ENERGY INC
Client nam:	XTO ENERGY INC
Site name:	ROCHESTER & PGH COAL FORMERLY 1 WELL
Primary fa:	ROCHESTER & PGH COAL CO FMLY FM LOWR 1
Client id:	265476
Pasite id:	117760
Primary 1:	119661
Sub facili:	ROCHESTER & PGH COAL CO FMLY FM LOWR 1
Sub faci 1:	75606
Primary 2:	Oil & Gas Location

Primary 3:	NonCoal		
Other faci:	063-23883		
Sub faci 2:	Well		
Sother id:	063-23883		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000127533

20
WNW
1/2 - 1 Mile

OIL_GAS **PAOG60000008681**

Organizati:	PETRO DEV CORP		
Client nam:	PETRO DEV CORP		
Site name:	F M DILLS 3 OG WELL		
Primary fa:	F M DILLS 3		
Client id:	88268		
Pasite id:	718831		
Primary 1:	717431		
Sub facili:	F M DILLS 3		
Sub faci 1:	987800		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-36511		
Sub faci 2:	Well		
Sother id:	063-36511		
Client rel:	Owner		
Site statu:	Proposed But Never Materialized		
Primary 4:	Operator Reported Not Drilled		
Sub faci 3:	401		
Compliance:	YES	Site id:	PAOG60000008681

21
East
1/2 - 1 Mile

OIL_GAS **PAOG60000105664**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	R STRONG 133A 5 WELL		
Primary fa:	R STRONG (133A) 5		
Client id:	244896		
Pasite id:	121730		
Primary 1:	123636		
Sub facili:	R STRONG (133A) 5		
Sub faci 1:	79598		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-28010		
Sub faci 2:	Well		
Sother id:	063-28010		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000105664

Map ID Direction Distance	Database	EDR ID Number
22 **WSW** **1/2 - 1 Mile**	**OIL_GAS**	**PAOG60000115674**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	C P SUNDBERG 3 WELL		
Primary fa:	C P SUNDBERG 3		
Client id:	244896		
Pasite id:	121446		
Primary 1:	123352		
Sub facili:	C P SUNDBERG 3		
Sub faci 1:	79314		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-27709		
Sub faci 2:	Well		
Sother id:	063-27709		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000115674

23 **ENE** **1/2 - 1 Mile**	**OIL_GAS**	**PAOG60000082575**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	ROBERT STRONG 3 WELL		
Primary fa:	ROBERT STRONG 3		
Client id:	244896		
Pasite id:	118524		
Primary 1:	120426		
Sub facili:	ROBERT STRONG 3		
Sub faci 1:	76371		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-24666		
Sub faci 2:	Well		
Sother id:	063-24666		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000082575

B25 **NE** **1/2 - 1 Mile**	**OIL_GAS**	**PAOG60000139666**

Organizati:	PENTEX ENERGY INC		
Client nam:	PENTEX ENERGY INC		
Site name:	DE RISINGER 3 OG WELL		
Primary fa:	D.E. RISINGER 3		
Client id:	48681		
Pasite id:	124683		
Primary 1:	126590		
Sub facili:	D.E. RISINGER 3		
Sub faci 1:	82565		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-31462		
Sub faci 2:	Well		
Sother id:	063-31462		
Client rel:	Owner		
Site statu:	Proposed But Never Materialized		
Primary 4:	Operator Reported Not Drilled		
Sub faci 3:	401		
Compliance:	YES	Site id:	PAOG60000139666

B26
NE
1/2 - 1 Mile

OIL_GAS **PAOG60000139667**

Organizati:	PENTEX ENERGY INC		
Client nam:	PENTEX ENERGY INC		
Site name:	LOWRY 7 WELL		
Primary fa:	LOWRY 7		
Client id:	48681		
Pasite id:	124700		
Primary 1:	126607		
Sub facili:	LOWRY 7		
Sub faci 1:	82582		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-31480		
Sub faci 2:	Well		
Sother id:	063-31480		
Client rel:	Owner		
Site statu:	Proposed But Never Materialized		
Primary 4:	Operator Reported Not Drilled		
Sub faci 3:	401		
Compliance:	YES	Site id:	PAOG60000139667

B24
NE
1/2 - 1 Mile

OIL_GAS **PAOG60000005791**

Organizati:	PENTEX ENERGY INC
Client nam:	PENTEX ENERGY INC
Site name:	EVANS 3 WELL
Primary fa:	EVANS 3
Client id:	48681
Pasite id:	124685
Primary 1:	126592
Sub facili:	EVANS 3
Sub faci 1:	82567
Primary 2:	Oil & Gas Location

Primary 3:	Coal		
Other faci:	063-31464		
Sub faci 2:	Well		
Sother id:	063-31464		
Client rel:	Owner		
Site statu:	Proposed But Never Materialized		
Primary 4:	Operator Reported Not Drilled		
Sub faci 3:	401		
Compliance:	YES	Site id:	PAOG60000005791

27
NE
1/2 - 1 Mile

OIL_GAS **PAOG60000048013**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	BERTHA SHEARER FORMERLY HARRY S 3 WELL		
Primary fa:	BERTHA SHEARER (FMLY HARRY SHEARER) 3		
Client id:	244896		
Pasite id:	121520		
Primary 1:	123426		
Sub facili:	BERTHA SHEARER (FMLY HARRY SHEARER) 3		
Sub faci 1:	79388		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-27784		
Sub faci 2:	Well		
Sother id:	063-27784		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000048013

28
North
1/2 - 1 Mile

OIL_GAS **PAOG60000115683**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	W L CRAMER 4 WELL		
Primary fa:	W L CRAMER 4		
Client id:	244896		
Pasite id:	121729		
Primary 1:	123635		
Sub facili:	W L CRAMER 4		
Sub faci 1:	79597		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-28009		
Sub faci 2:	Well		
Sother id:	063-28009		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000115683

Map ID Direction Distance	Database	EDR ID Number

29
ESE
1/2 - 1 Mile

OIL_GAS **PAOG60000058510**

Organizati:	EXOTIC OIL & GAS LLC		
Client nam:	EXOTIC OIL & GAS LLC		
Site name:	MYSTIC BROOKE 2 OG WELL		
Primary fa:	MYSTIC BROOKE 2		
Client id:	147590		
Pasite id:	639235		
Primary 1:	654464		
Sub facili:	MYSTIC BROOKE 2		
Sub faci 1:	805571		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-34004		
Sub faci 2:	Well		
Sother id:	063-34004		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000058510

30
South
1/2 - 1 Mile

OIL_GAS **PAOG60000103332**

Organizati:	SNYDER BROS INC		
Client nam:	SNYDER BROS INC		
Site name:	CHARLES SNYDER 2 WELL		
Primary fa:	CHARLES SNYDER 2		
Client id:	63561		
Pasite id:	118006		
Primary 1:	119908		
Sub facili:	CHARLES SNYDER 2		
Sub faci 1:	75852		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-24133		
Sub faci 2:	Well		
Sother id:	063-24133		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000103332

31
SSW
1/2 - 1 Mile

OIL_GAS **PAOG60000000423**

Organizati:	XTO ENERGY INC		
Client nam:	XTO ENERGY INC		
Site name:	R & P COAL FORMERLY FM LOWRY 2 WELL		
Primary fa:	R&P COAL CO FMLY F M LOWRY 2		
Client id:	265476		
Pasite id:	117761		
Primary 1:	119662		
Sub facili:	R&P COAL CO FMLY F M LOWRY 2		
Sub faci 1:	75607		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23884		
Sub faci 2:	Well		
Sother id:	063-23884		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000000423

32
East
1/2 - 1 Mile

OIL_GAS **PAOG60000079475**

Organizati:	CHRISTINE MARIE EXPLORATION LP		
Client nam:	CHRISTINE MARIE EXPLORATION LP		
Site name:	MYSTIC BROOKE 8 OG WELL		
Primary fa:	MYSTIC BROOKE 8		
Client id:	227462		
Pasite id:	651573		
Primary 1:	664951		
Sub facili:	MYSTIC BROOKE 8		
Sub faci 1:	889901		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-34211		
Sub faci 2:	Well		
Sother id:	063-34211		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000079475

33
South
1/2 - 1 Mile

OIL_GAS **PAOG60000019873**

Organizati:	SNYDER BROS INC
Client nam:	SNYDER BROS INC
Site name:	CHARLES SNYDER 3 WELL
Primary fa:	CHARLES SNYDER 3
Client id:	63561
Pasite id:	118009
Primary 1:	119911
Sub facili:	CHARLES SNYDER 3
Sub faci 1:	75855
Primary 2:	Oil & Gas Location

Primary 3:	Coal		
Other faci:	063-24136		
Sub faci 2:	Well		
Sother id:	063-24136		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000019873

34
NW **OIL_GAS** **PAOG60000010064**
1/2 - 1 Mile

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	HARRY D HILL 3 WELL		
Primary fa:	HARRY D HILL 3		
Client id:	244896		
Pasite id:	117131		
Primary 1:	119032		
Sub facili:	HARRY D HILL 3		
Sub faci 1:	74977		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23231		
Sub faci 2:	Well		
Sother id:	063-23231		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000010064

35
WNW **OIL_GAS** **PAOG60000105126**
1/2 - 1 Mile

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	M F DILLS JR FMLY M H GEORG 2 WELL		
Primary fa:	M F DILLS JR (FMLY M H GEORGE) 2		
Client id:	244896		
Pasite id:	116954		
Primary 1:	118854		
Sub facili:	M F DILLS JR (FMLY M H GEORGE) 2		
Sub faci 1:	74800		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23055		
Sub faci 2:	Well		
Sother id:	063-23055		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000105126

Map ID Direction Distance	Database	EDR ID Number

36
NNW
1/2 - 1 Mile

OIL_GAS **PAOG60000030150**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	HARRY D HILL 2 WELL		
Primary fa:	HARRY D HILL 2		
Client id:	244896		
Pasite id:	117130		
Primary 1:	119031		
Sub facili:	HARRY D HILL 2		
Sub faci 1:	74976		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23230		
Sub faci 2:	Well		
Sother id:	063-23230		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000030150

37
NE
1/2 - 1 Mile

OIL_GAS **PAOG60000142559**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	HARRY A SHEARER 2 WELL		
Primary fa:	HARRY A SHEARER 2		
Client id:	244896		
Pasite id:	119346		
Primary 1:	121249		
Sub facili:	HARRY A SHEARER 2		
Sub faci 1:	77193		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-25518		
Sub faci 2:	Well		
Sother id:	063-25518		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000142559

38
West
1/2 - 1 Mile

OIL_GAS **PAOG60000030141**

Organizati:	ALLIANCE PETROLEUM CORP
Client nam:	ALLIANCE PETROLEUM CORP
Site name:	M F DILLS JR FMLY M H GEORG 1 WELL
Primary fa:	M F DILLS JR (FMLY M H GEORGE) 1
Client id:	244896
Pasite id:	116953
Primary 1:	118853
Sub facili:	M F DILLS JR (FMLY M H GEORGE) 1
Sub faci 1:	74799
Primary 2:	Oil & Gas Location
Primary 3:	NonCoal
Other faci:	063-23054
Sub faci 2:	Well
Sother id:	063-23054
Client rel:	Owner
Site statu:	Active
Primary 4:	Active
Sub faci 3:	4
Compliance:	YES
Site id:	PAOG60000030141

39
NE
1/2 - 1 Mile

OIL_GAS **PAOG60000009372**

Organizati:	Unavailable
Client nam:	WALKER J C
Site name:	HARRY A SHEARER 1 WELL
Primary fa:	HARRY A SHEARER 1
Client id:	70816
Pasite id:	114017
Primary 1:	115918
Sub facili:	HARRY A SHEARER 1
Sub faci 1:	71862
Primary 2:	Oil & Gas Location
Primary 3:	Coal
Other faci:	063-20095
Sub faci 2:	Well
Sother id:	063-20095
Client rel:	Owner
Site statu:	Active
Primary 4:	Active
Sub faci 3:	4
Compliance:	YES
Site id:	PAOG60000009372

40
WSW
1/2 - 1 Mile

OIL_GAS **PAOG60000115180**

Organizati:	XTO ENERGY INC
Client nam:	XTO ENERGY INC
Site name:	ROCHESTER & PGH COAL FORMERLY 5 WELL
Primary fa:	ROCHESTER & PGH COAL CO FMLY F M LOW 5
Client id:	265476
Pasite id:	117946
Primary 1:	119848
Sub facili:	ROCHESTER & PGH COAL CO FMLY F M LOW 5
Sub faci 1:	75792
Primary 2:	Oil & Gas Location

Primary 3:	NonCoal		
Other faci:	063-24073		
Sub faci 2:	Well		
Sother id:	063-24073		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000115180

41
NNE **OIL_GAS** **PAOG60000047294**
1/2 - 1 Mile

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	W L CRAMER 1 WELL		
Primary fa:	W L CRAMER 1		
Client id:	244896		
Pasite id:	117142		
Primary 1:	119043		
Sub facili:	W L CRAMER 1		
Sub faci 1:	74988		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23242		
Sub faci 2:	Well		
Sother id:	063-23242		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000047294

42
WSW **OIL_GAS** **PAOG60000057277**
1/2 - 1 Mile

Organizati:	XTO ENERGY INC		
Client nam:	XTO ENERGY INC		
Site name:	ROCHESTER & PGH COAL FORMERLY 3 WELL		
Primary fa:	ROCHESTER & PGH COAL CO FMLY F M LOW 3		
Client id:	265476		
Pasite id:	117784		
Primary 1:	119685		
Sub facili:	ROCHESTER & PGH COAL CO FMLY F M LOW 3		
Sub faci 1:	75630		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23909		
Sub faci 2:	Well		
Sother id:	063-23909		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000057277

Map ID Direction Distance	Database	EDR ID Number
C43 **East** **1/2 - 1 Mile**	**OIL_GAS**	**PAOG60000058017**

Organizati:	CHRISTINE MARIE EXPLORATION LP		
Client nam:	CHRISTINE MARIE EXPLORATION LP		
Site name:	MYSTIC BROOKE 1 OG WELL		
Primary fa:	MYSTIC BROOKE 1		
Client id:	227462		
Pasite id:	633600		
Primary 1:	650181		
Sub facili:	MYSTIC BROOKE 1		
Sub faci 1:	797302		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-33827		
Sub faci 2:	Well		
Sother id:	063-33827		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000058017

C44 **East** **1/2 - 1 Mile**	**OIL_GAS**	**PAOG60000127148**

Organizati:	CHRISTINE MARIE EXPLORATION LP		
Client nam:	CHRISTINE MARIE EXPLORATION LP		
Site name:	MYSTIC BROOKE 1B OG WELL		
Primary fa:	MYSTIC BROOKE 1B		
Client id:	227462		
Pasite id:	649556		
Primary 1:	663321		
Sub facili:	MYSTIC BROOKE 1B		
Sub faci 1:	843748		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-34138		
Sub faci 2:	Well		
Sother id:	063-34138		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000127148

45 **SSW** **1/2 - 1 Mile**	**OIL_GAS**	**PAOG60000040711**

Organizati:	XTO ENERGY INC		
Client nam:	XTO ENERGY INC		
Site name:	ROCHESTER & PGH COAL FORMERLY 1 WELL		
Primary fa:	ROCHESTER & PGH COAL CO FMLY D R GRI 1		
Client id:	265476		
Pasite id:	117842		
Primary 1:	119743		
Sub facili:	ROCHESTER & PGH COAL CO FMLY D R GRI 1		
Sub faci 1:	75688		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23968		
Sub faci 2:	Well		
Sother id:	063-23968		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000040711

46
ESE **OIL_GAS** **PAOG60000143539**
1/2 - 1 Mile

Organizati:	EXOTIC OIL & GAS LLC		
Client nam:	EXOTIC OIL & GAS LLC		
Site name:	MYSTIC BROOKE 3 OG WELL		
Primary fa:	MYSTIC BROOKE 3		
Client id:	147590		
Pasite id:	639339		
Primary 1:	654525		
Sub facili:	MYSTIC BROOKE 3		
Sub faci 1:	805700		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-34005		
Sub faci 2:	Well		
Sother id:	063-34005		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000143539

47
West **OIL_GAS** **PAOG60000122036**
1/2 - 1 Mile

Organizati:	ALLIANCE PETROLEUM CORP
Client nam:	ALLIANCE PETROLEUM CORP
Site name:	E B CAMPBELL 26A 1 WELL
Primary fa:	E B CAMPBELL (26A) 1
Client id:	244896
Pasite id:	121035
Primary 1:	122941
Sub facili:	E B CAMPBELL (26A) 1
Sub faci 1:	78903
Primary 2:	Oil & Gas Location

Primary 3:	NonCoal		
Other faci:	063-27273		
Sub faci 2:	Well		
Sother id:	063-27273		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000122036

48
ENE **OIL_GAS** **PAOG60000048017**
1/2 - 1 Mile

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	ROBERT F STRONG 1 WELL		
Primary fa:	ROBERT F STRONG 1		
Client id:	244896		
Pasite id:	121717		
Primary 1:	123623		
Sub facili:	ROBERT F STRONG 1		
Sub faci 1:	79585		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-27997		
Sub faci 2:	Well		
Sother id:	063-27997		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000048017

49
WNW **OIL_GAS** **PAOG60000067829**
1/2 - 1 Mile

Organizati:	XTO ENERGY INC		
Client nam:	XTO ENERGY INC		
Site name:	AC IRWIN 1C478 WELL		
Primary fa:	A C IRWIN 1C478		
Client id:	265476		
Pasite id:	118766		
Primary 1:	120669		
Sub facili:	A C IRWIN 1C478		
Sub faci 1:	76613		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-24921		
Sub faci 2:	Well		
Sother id:	063-24921		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000067829

Map ID Direction Distance	Database	EDR ID Number

50
NW
1/2 - 1 Mile

OIL_GAS **PAOG60000121529**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	HARRY D HILL 4 WELL		
Primary fa:	HARRY D HILL 4		
Client id:	244896		
Pasite id:	117132		
Primary 1:	119033		
Sub facili:	HARRY D HILL 4		
Sub faci 1:	74978		
Primary 2:	Oil & Gas Location		
Primary 3:	NonCoal		
Other faci:	063-23232		
Sub faci 2:	Well		
Sother id:	063-23232		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000121529

51
NW
1/2 - 1 Mile

OIL_GAS **PAOG60000020149**

Organizati:	ALLIANCE PETROLEUM CORP		
Client nam:	ALLIANCE PETROLEUM CORP		
Site name:	H D HILL 5 WELL		
Primary fa:	H D HILL 5		
Client id:	244896		
Pasite id:	121099		
Primary 1:	123005		
Sub facili:	H D HILL 5		
Sub faci 1:	78967		
Primary 2:	Oil & Gas Location		
Primary 3:	Coal		
Other faci:	063-27341		
Sub faci 2:	Well		
Sother id:	063-27341		
Client rel:	Owner		
Site statu:	Active		
Primary 4:	Active		
Sub faci 3:	4		
Compliance:	YES	Site id:	PAOG60000020149

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: PA Radon

Radon Test Results

Zipcode	Num Tests	Min pCi/L	Max pCi/L	Avg pCi/L
15701	1613	0.1	165.1	7

EPA Region 3 Statistical Summary Readings for Zip Code: 15701

Number of sites tested: 577.

Maximum Radon Level: 104.3 pCi/L.
Minimum Radon Level: 0.2 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
333 (57.71%)	154 (26.69%)	51 (8.84%)	31 (5.37%)	7 (1.21%)	1 (0.17%)

Federal EPA Radon Zone for INDIANA County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Pennsylvania Public Water Supply Wells
Source: Pennsylvania Department of Environmental Resources Bureau of Water Supply
Telephone: 717-787-5017

Pennsylvania Groundwater Information System
Source: Department of Conservation and Natural Resources
Telephone: 717-702-2045

OTHER STATE DATABASE INFORMATION

Pennsylvania Oil and Gas Locations
Source: Pennsylvania Department of Environmental Protection
Telephone: 814-863-0104
An Oil and Gas Location is a DEP primary facility type related to the Oil & Gas Program. The sub-facility types related to Oil and Gas that are included in this layer are:Land Application -- An area where drilling cuttings or waste are disposed by land application; Well-- A well associated with oil and/or gas production; Pit -- An approved pit that is used for storage of oil and gas well fluids.Some sub facility types are not included in this layer due to security policies.

RADON

State Database: PA Radon
Source: Department of Environmental Protection
Telephone: 717-783-3594
Radon Test Results Statistics by Zip Code

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Region 3 Statistical Summary Readings
Source: Region 3 EPA
Telephone: 215-814-2082
Radon readings for Delaware, D.C., Maryland, Pennsylvania, Virginia and West Virginia.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

APPENDIX E

FIELD METHODS

Drilling, Soil Sampling, Well Construction Methods

Boring/monitoring well locations were selected based on site physical constraints (i.e., overhead and underground utilities, property boundaries, locations of removed tanks and distribution system, and structures). In addition to the location of potential soil and ground water contamination, borings were advanced during the site study using the following drilling methods:

Air Rotary

Air rotary drill rigs were used to advance borings for monitoring well installation. Boring diameters ranged from 10 inches to 8 inches in diameter. Soil/monitoring boring logs were constructed by identification of drill cuttings using the Unified Soil Classification System (USCS).

Hollow Stem Auger

Hollow stem auger drilling was used to advance borings for the purpose of collecting soil samples and to install monitoring wells. The auger size used was 4 inch inside diameter (7.25 inch outside diameter). Boring logs were constructed by direct observation of the split spoon and core soil samples. Soils were described using the USCS.

Direct Push Drilling

Direct push drilling was used to collect soil samples using a continuous core. Soil samples were collected in a 5 foot x 2 inch diameter PVC tube. Lithologic logs were constructed by direct observation of the continuous soil sampling liners. Soils were described using the USCS.

Soil Sample Collection

Drill cuttings from air rotary borings were scanned for volatile organic compounds (VOCs) using a photoionization detector (PID). However, these PID measurements from the air rotary drilling method should be considered qualitative due to the high potential for volatilization of compounds in the air stream. Also, the air stream was scanned during drilling advancement in order to monitor breathing zones for health and safety protocol.

Soil samples from hollow steam auger and direct push borings were screened for VOCs using a PID. Soil samples were collected from each boring on the basis of PID measurements and visual observations. Soil samples were collected for VOC by inserting an Encore® sampler or TerraCore® Sampler into the soil core. The soil from the sampler was deposited in a laboratory provided 40-milliliter glass container and preserved with methanol. For semi-volatile analysis soils were collected into a laboratory provided 4-ounce glass jar. The samples were labeled, stored in a chilled cooler, and transported to the analytical laboratory under a chain of custody.

Monitoring Well Construction

Monitoring wells were constructed of 2 inch or 4 inch diameter PVC/Steel/Wire Wrap casing. Screened intervals were constructed of .010 machine slotted casing. Appropriately sized PVC blank riser extended wells to the ground surface. The annuli between the boreholes and screened intervals was packed with clean quartz sand. The sand pack was extended approximately two feet above the top of the screened interval. The remaining vertical interval above the sand pack was Bentonite sealed to the surface. Each well was completed in a flush mounted manway.

Slug Test Analysis Methodology

The most practical method for determining aquifer characteristics (e.g. hydraulic conductivity, and transmissivity) utilizing small diameter monitoring points is a aquifer slug test. Transmissivity (T) is a term that describes the velocity of a fluid traveling through an aquifer unit or it is the ability of the aquifer's subsurface material to transmit fluid (hydraulic conductivity - K) at a hydraulic gradient (I). When water is displaced in well during a slug test, water is removed and/or added from the aquifer surrounding the well and consequently the water table is lowered or raised over a given area. The displacement within the area of influence is the distance the water level is lowered and or raised from the initial static level. By collecting this displacement data during a slug test via a data logger system and/or manually with a water level indicator, the data can be used to generate displacement versus time best-fit line to estimate the variation of displacement with time near the well. This best fit line will describe the ability of the ground water to permeate through the aquifer.

Bouwer and Rice Method for Slug Tests

The Bouwer and Rice equation allows for the determination of the aquifer characteristics based on the following assumptions:

- The aquifer is homogenous, isotropic, of uniform thickness and infinite aerial extent.
- The water level surface is horizontal.
- The well is displaced at a constant rate.The well partially penetrates the aquifer and flow is horizontal within the aquifer.
- Water removed and/or added is performed instantaneously with a declining and/or ascending head.

To utilize the Bouwer and Rice equation: K = (rc2ln (Re/rw)/2Le x 1/t x ln yo/yt

Where:

K	=	Hydraulic Conductivity
R_c	=	radius of casing
Re	=	effective radial distance over which y is dissipated
r_w	=	radial distance of undisturbed portion of aquifer from centerline
L_e	=	length of screened area
t	=	time value
y	=	vertical difference between water level inside well and static water table outside well
y_o	=	y at time zero
y_t	=	y at time t

Best-fit time-displacement line is superimposed on the time versus displacement semi log graphs. A point is selected to determine coordinates of match points of y and t (yo at t = 0 and yt at t), a number of y and t measurements can be taken and (ln (yo/yt)/t is determined as the slope of the best-fitting line through the y versus t points on semi-logarithmic paper. The straight line through the data points can also be used to select two values of y along with the time interval t between them for substitution into the equation.

Groundwater Sampling Methods

The sample collection methodology used by Mountain Research was designed to comply with US Environmental Protection Agency (EPA) SW-846 protocol and the Pennsylvania Groundwater Monitoring Guidance Manual, December 1, 2001. Prior to sampling, all field sampling equipment was properly cleaned to avoid sample contamination. The static water level (SWL) of each well was measured as the first step in sampling. These measurements were used to calculate groundwater elevation at each well.

Each well was purged of at least three well volumes of fluid, or until the monitoring well went dry, using a submersible pump or dedicated disposable bailer. Samples were then collected using the dedicated disposable bailer. Groundwater was decanted from the bailer into appropriate, laboratory supplied containers. The samples were labeled and stored in an ice cooler for transport to the analytical laboratory.

Direct Push Boring Advancement and Soil Sampling Methods

In addition to the location of potential contamination, boring/monitoring well locations were selected with knowledge of site physical constraints (i.e., overhead and underground utilities, property boundaries, locations of removed tanks and distribution system, and structures). Borings were advanced during the site study using the following drilling methods:

Direct Push Drilling

Direct push drilling was used to collect soil samples using a continuous core. Soil samples were collected in a 5 foot x 2 inch diameter PVC tube. Lithologic logs were constructed by direct observation of the continuous soil sampling liners. Soils were described using the USCS.

Soil samples were collected from soil borings following the method below:

Soil Sample Collection

Soil samples from direct push borings were screened for VOCs using a PID. Soil samples were collected from each boring on the basis of PID measurements and visual observations. Soil samples were collected for VOC by inserting an Encore® sampler or TerraCore® Sampler into the soil core. The soil from the sampler was deposited in a laboratory provided 40-milliliter glass container and preserved with methanol. For semi-volatile analysis soils were collected into a laboratory provided 4-ounce glass jar. The samples were labeled, stored in a chilled cooler, and transported to the analytical laboratory under a chain of custody.

APPENDIX F

GEOPHYSICS REPORT

VIA EMAIL: *mkern@mountainresearch.com*

June 15, 2016

Michael Kern, PG
Mountain Research LLC
825 25th Street
Altoona, PA 16601
(814) 949-2034

Re: Geophysical Survey Report
4985 Lucerne Roade
Indiana, Pennsylvania
THG Project No. 213-6182

Dear Mr. Kern:

THG Geophysics, Ltd. (THG) conducted a geophysical survey at the property located at 4985 Lucerne Road located in Indiana, Pennsylvania on June 1, 2016 (Figure 1). The survey was performed to clear proposed boring locations and explore for potential undocumented underground storage tanks (USTs). THG utilized time-domain electromagnetic (TDEM) imaging techniques and ground penetrating radar (GPR) to image the subsurface of the property (Figures 2-3).

TDEM data were collected over all accessible areas of the property. TDEM imaging detects metal by utilizing a transmitter antenna that emits a pulsed electromagnetic signal and a receiver that measures the slow decay of energy from excited ferrous and non-ferrous sources (in milli-Volts). A Geonics EM-61 integrated with a Trimble Geo7X global positioning system was used to complete this survey.

GPR data were collected over the same areas as the TDEM survey, specifically targeting anomalous areas exhibited in the TDEM data. The GPR unit operates by transmitting radar waves (microwave band) downward from a transmitting antenna and receives the reflected energy at the receiving antenna. The reflected signal is output digitally and displayed as a radar-gram. Any contrast in dielectric properties show up as reflecting boundaries. Subsurface soils containing electrically conductive materials (i.e. clays, groundwater, slag) rapidly attenuate the radar signal and therefore decrease penetration depth. A Sensors and Software Noggin GPR equipped with a 250 MHz antenna array was used to image to a depth of approximately 4 feet below grade.

THG's findings and conclusions are:

- A geophysical survey of the property located at 4985 Lucerne Road located in Indiana, Pennsylvania was completed using TDEM and GPR on June 1, 2016 (Figure 1);
- The location of the existing USTs were confirmed (Figures 2-3);
- No indications of undocumented USTs were identified in the dataset (Figures 2-3);

- The location of several subsurface utilities were confirmed and located (Figure 3);
- Due to soils conditions, the continuation of sewer line utilities could not be mapped in the western portion of the site (Figure 3) and documented drain tiles near the building were not mapped.

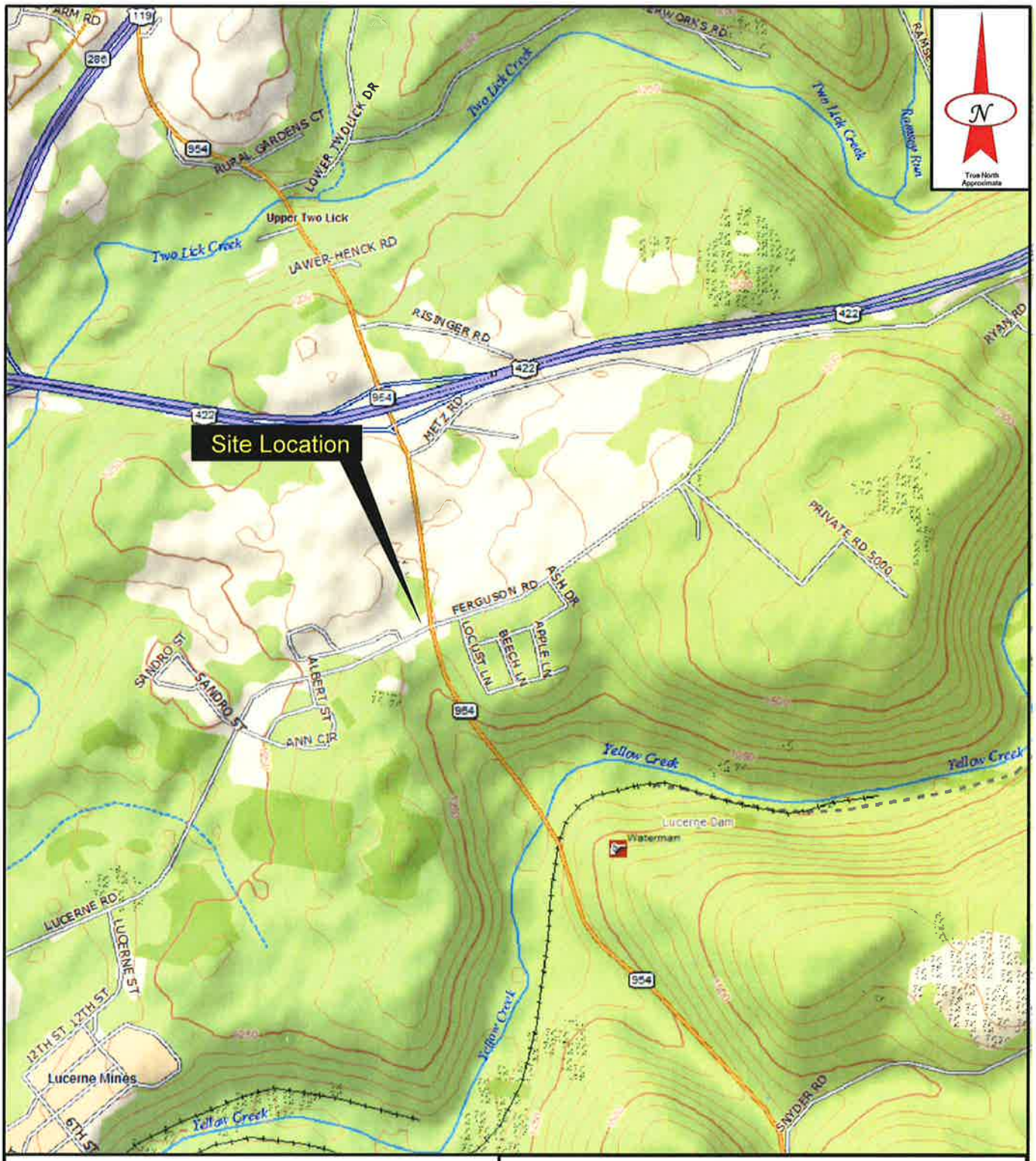
Should you have any questions or require additional information, please contact our office at (724) 325-3996 or via e-mail ksm@thggeophysics.com.

Respectfully,
THG Geophysics, Ltd.

Kate McKinley, PG
Project Manager

Enclosures

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



THG GEOPHYSICS Ltd

4280 Old William Penn Hwy
Murrysville, Pennsylvania 15668
(724) 325-3996 Fax: (724) 733-7901

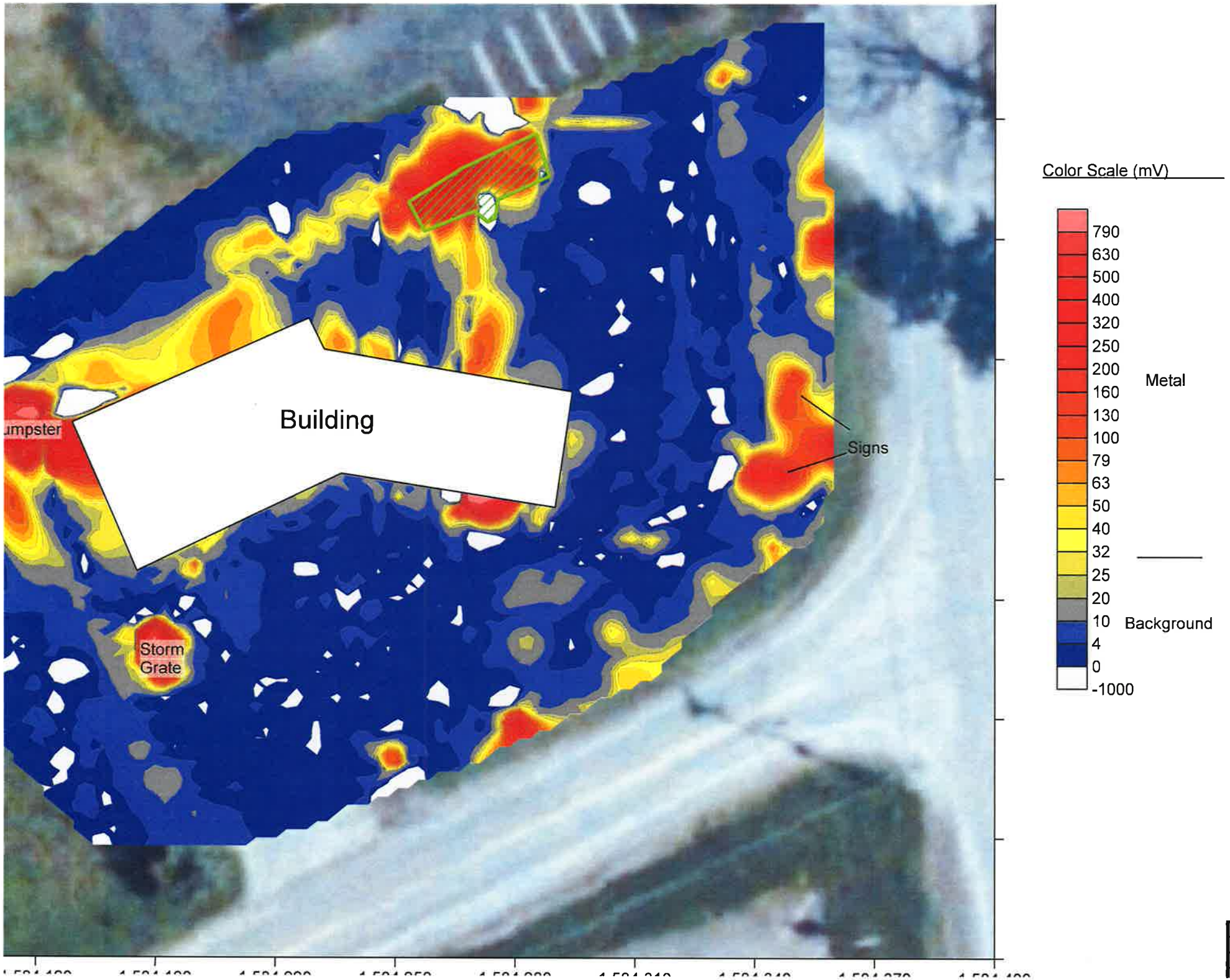
www.geo-image.com

0 ft 1000 ft 2000 ft 3000 ft 4000 ft 5000 ft

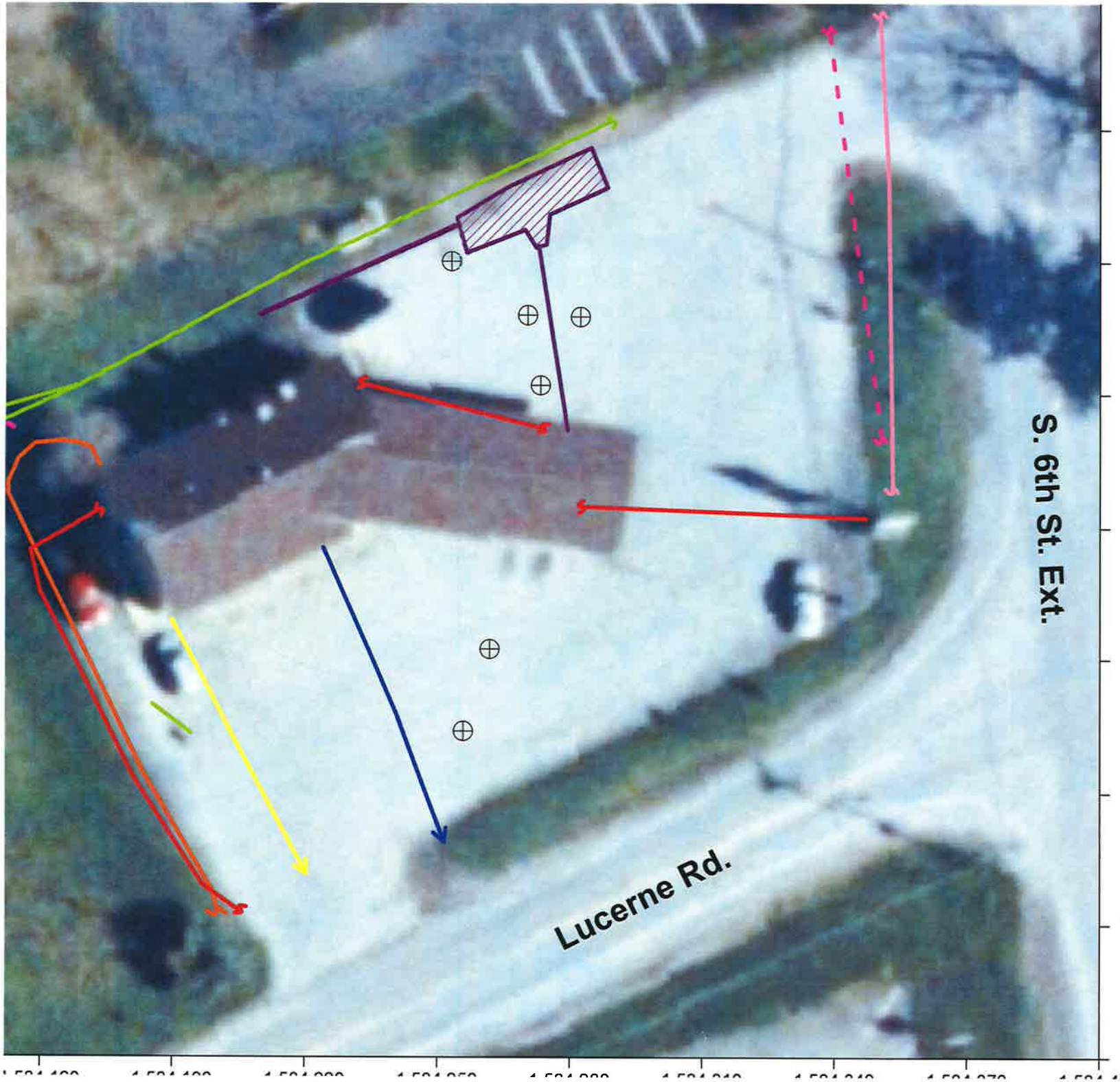
Figure 1
Site Location Map

Geophysical Investigation
4985 Lucerne Road
Indiana, Pennsylvania

SCALE: 1:24,000	PROJECT NO.: 213-6182	DRAWING NO.: DWG6182F1
DATE : 06/2/2016		
DRAWN BY: MLT	SOURCE: 1981 Indiana (PA) USGS 7.5 Minute Topographic Quadrangle	
CHECKED BY: KSM		



DRN
DES
CHK
REV



Legend

- Water Utility
- Gas Utility
- Electric Utility
- Unknown Utility
- Storm/Sewer Utility
- Telecom Utility
- Unknown Utility Located in TDEM Dataset

Notes

Geophysical survey c
time-domain electr
and Software Nogg
with a 250 MHz an

Real-time positioni
global positioning s
(Pennsylvania Sou

Locations are appr

DRN	
DES	
CHK	
REV	

APPENDIX G

LITHOLOGIC AND WELL CONSTRUCTION LOGS

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-1**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 11' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/90'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0			0 - 0.5' - ASPHALT.	
		95	0.5 - 1.5' - SANDY CLAY (CLS): FILL AND ROCKY, LARGE SOILS AT TOP OF INTERVAL; BROWN/GREY COLORATION; TRANSITIONS TO FINE SANDY CLAY, TO CLAYEY SAND AT END OF INTERVAL.	
		2,000		
		7.6	1.5 - 3' - SANDY CLAY (CLS): MORE CLAY - LESS ROCKS AND SAND; DARKER IN COLOR THAN PREVIOUS INTERVAL.	
		0.0		
5		0.0	3 - 4' - SANDY CLAY (CLS): MORE SAND CONTENT; TAN COLORATION; DRIER.	
		0.0	4 - 6' - SANDY CLAY (CLS): MORE CLAY CONTENT.	
		0.0	6 - 7' - SANDY CLAY (CLS): MORESAND CONTENT; DRIER.	
		0.0	7 - 8' - SANDY CLAY (CLS): INCREASED SAND CONTENT; MOISTURE AT BOTTOM OF INTERVAL; HEAVY CLAY; VERY LOW PLASTICITY IN SANDY ZONE - SOME IN CLAY ZONE.	
		0.0		
10	SB-1 (11')	0.0	8 - 8.5' - GRAVEL: SMALL COBBLES/LARGE GRAVEL.	
		0.0	8.5 - 9' - SAND: COARSE.	
			9 - 11' - NO RECOVERY.	
			11' - REFUSAL AT 11' BGS.	
15			BA	
20				
25				
30				
35				

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-2**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 12' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0				
		0.0	0 - 1' - ASPHALT.	
		17.7	1 - 2' - SANDY CLAY (CLS): YELLOWISH-BROWN; HIGHER CLAY CONTENT; NO ODOR; ANGULAR; MEDIUM PLASTICITY; QUITE DRY.	
		0.0	2 - 3' - SILTY CLAY (CL-ML): HIGHER CLAY CONTENT THAN ABOVE INTERVAL; FINER MATERIAL; SMALLER SAND; MIXED WITH LARGE SILT; MEDIUM PLASTICITY.	
		2.5	3 - 6' - SANDY CLAY (CLS): YELLOWISH-ORANGE; COBBLE SIZED STONES; WHITE SAND; LARGE GRAIN SIZE; LOW PLASTICITY; NO RECOVERY FROM 4 TO 6' BGS - DRIER THAN REMAINING PORTION OF INTERVAL.	
5		0.0		
		0.0		
		0.0	6 - 7' - SANDY CLAY (CLS): DARK GREY; LOW TO MEDIUM PLASTICITY; MOISTURE PRESENT.	
		0.0	7 - 8' - SANDY CLAY (CLS): VERY COARSE; MOISTURE PRESENT.	
		0.0	8 - 10' - CLAY (CL): GREY TO YELLOWISH-ORANGE; MOTTLING; LOW PLASTICITY.	
10		0.0		
	SB-2 (11')	0.0	10 - 12' - SAND (SW): COARSE SAND TO SANDSTONE BEDROCK; STARTS WHITE AND TRANSITIONS TO ORANGE.	
		0.0		
			12' - REFUSAL AT 12' BGS.	
15				
20				
25				
30				
35				

BA

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-3**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 12' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0			0 - 0.5' - ASPHALT.	
		0.0	0.5 - 1' - FILL: ROCK; STRONG ODOR DURING AIR KNIFING.	
		22.4	1 - 4' - SILTY CLAY (CL-ML): DARK ORGANIC SILTY CLAY, MIXED WITH	
		0.0		
		57.6	4 - 5' - SANDY CLAY (CLS): MIXED WITH GRAVEL; MOISTER THAN PREVIOUS INTERVAL.	
5		0.0	5 - 6' - SILTY CLAY (CL-ML): GREY; FINE; LOW PLASTICITY; NO ODOR.	
		119	6 - 7' - SAND (SW): WHITE; COARSE; ANGULAR.	
		183	7 - 9' - SILTY CLAY (CL-ML): RED COLORATION; FINE; VERY DRY; STRONG ODOR.	
	SB-3 (8')	255		
		197	9 - 10' - SANDY CLAY (CLS): COARSE; DIFFICULT MATERIAL - TIGHT CLAY; NO DISCOLORATION.	
10		168.2		
		12	10 - 12' - SAND (SW): COARSE; MORE MOISTURE; MIXED WITH STAINED MEDIUM PLASTICITY CLAY.	
	SB-3 (12')	550		
			12' - REFUSAL AT 12' BGS.	
15				
20				
25				
30				
35				

BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

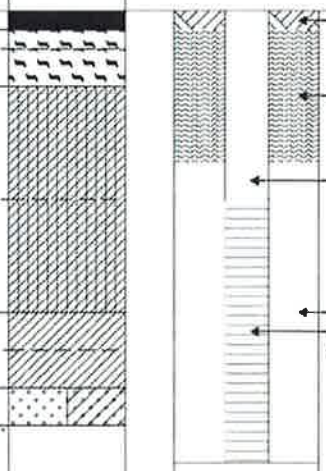
WELL NO.: SB-4/MW-1

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 11' BGS.
SATURATED ZONE: 8 - 10' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		0.0	0.5 - 1' - FILL: LARGE ARMOUNTS OF ROCKS - FILL.
		0.0	
		0.0	1 - 2' - FILL: DARK ORGANIC FILL.
		0.0	2 - 5' - SILTY CLAY (CL-ML): YELLOWISH IN COLOR; HIGH PLASTICITY; LOW MOISTURE; LESS DARK.
		0.0	
5		0.0	
		3.6	5 - 8' - SILTY CLAY (CL-ML): YELLOW-ORANGE; LOW PLASTICITY; LOW MOISTURE.
		0.3	
		0.0	8 - 9' - SANDY CLAY (CLS): ORANGE; POTENTIALLY WATER AROUND 8 - 9' BGS.
		0.0	
10		0.0	9 - 10' - SANDY CLAY (CLS): DARKER ORANGE; MIXED WITH HEAVY, COARSE RED SAND.
	SB-4/MW-1 (11')	0.0	10 - 11' - CLAYEY SAND (SW-SC): YELLOW-ORANGE; COARSE; SOME CLAYS - ORANGE; SATURATION PRESENT.
			11' - REFUSAL AT 11' BGS.
15			
20			
25			
30			
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS

- CONCRETE 0 - 0.5'
- BENTONITE 0.5 - 4'
- PVC RISER DIA 2" 0 - 5'
- FILTER SAND 4 - 12'
- WELL SCREEN DIA 2" SLOT 0.020 5 - 12'

BA

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-5**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 14' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			
		0.0	0 - 0.5' - CONCRETE.
		0.0	0.5 - 1' - FILL: ROCKS.
		0.6	1 - 2' - FILL: DARK ORGANIC FILL.
		0.0	2 - 3' - SILTY CLAY (CL-ML): SOME ORGANICS; MOTTLED.
		0.0	3 - 4' - SILTY CLAY (CL-ML): ORGANIC INCLUSIONS; MOIST.
5		0.0	4 - 5' - SANDY CLAY (CLS): LARGER PARTICLES; STILL MOIST; MEDIUM PLASTICITY; LITTLE ODOR.
		0.7	5 - 7.5' - SILTY CLAY (CL-ML): YELLOW-ORANGE; LOW PLASTICITY; LOW MOISTURE.
		0.0	
		0.0	7.5 - 8' - SANDSTONE: WHITE SANDSTONE INCLUSION.
		0.0	8 - 9.5' - SILTY CLAY (CL-ML): YELLOW-ORANGE AND WHITE/GREY; VERY LOW MOISTURE; LOW PLASTICITY.
10		0.0	9.5 - 10' - SAND (SW): WHITE; ANGULAR; SOME CLAY CONTENT NEAR 10' BGS.
		1.0	10 - 11' - SILTY CLAY (CL-ML): VERY RED IN COLOR; DRY.
		2.0	11 - 13' - SILTY CLAY (CL-ML): ORANGE/GREY; DRY; LOW PLASTICITY; ANGULAR GRAVEL AT 13' BGS.
	SB-5 (13')	0.9	
		0.0	13 - 14' - CLAY (CL): GREY; EXTREMELY TIGHT; LOW PLASTICITY; EXTREMELY LOW MOISTURE; NOT ENTIRELY DRY.
15			14' - REFUSAL AT 14' BGS.
20			
25			
30			
35			

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MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-6**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 14' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0				
		0.0	0 - 0.5' - ASPHALT.	
		6.3	0.5 - 1' - FILL: ROCKY FILL.	
		0.0	1 - 2' - SANDY CLAY.	
		0.0	2 - 4' - CLAY (CL): MOTTLED; MOIST.	
		0.0	4 - 5' - NO RECOVERY.	
5	SB-6 (6')	1467	5 - 6.5' - SANDY CLAY (CLS): LOW PLASTICITY; STRONG ODOR; FINE SAND - SUB-ROUNDED AND LOW MOISTURE.	
		1455	6.5 - 8' - SANDY CLAY (CLS): LOW PLASTICITY; STRONG ODOR; FINE SAND - SUB-ROUNDED; COARSER GRAINS; LOW MOISTURE; SLIGHT STAINING.	
		613	8 - 9' - SANDY CLAY (CLS): LOW PLASTICITY; STRONG ODOR; FINE SAND - SUB-ROUNDED; COARSER GRAINS; LOW MOISTURE; SLIGHT STAINING; DRIER THAN PREVIOUS INTERVAL.	
10	SB-6 (11')	51.2	9 - 10' - SANDY CLAY (CLS): LOW PLASTICITY; STRONG ODOR; FINE SAND - SUB-ROUNDED; COARSER GRAINS; LOW MOISTURE; SLIGHT STAINING; DRIER THAN PREVIOUS INTERVAL; GRAVEL INCLUSIONS.	
		23.4	10 - 14' - SANDY CLAY (CLS): DARK; DRY; LOW PLASTICITY; STRONG ODOR; FINE SAND - SUB-ROUNDED; COARSER GRAINS; LOW MOISTURE; SLIGHT STAINING; TRANSITIONS INTO SANDSTONE BEDROCK AT BOTTOM OF INTERVAL.	
		540		
		35		
		16.7		
		0.0		
15			14' - REFUSAL AT 14' BGS.	
20				
25				
30				
35				

BA

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-7**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 13' BGS.
SATURATED ZONE: 8' BGS.

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		0.0	0.5 - 1' - FILL: ROCKS.
		15	1 - 2' - FILL: DARK ORGANIC FILL; LIMITED ODOR.
		4.5	2 - 3' - SILTY CLAY.
		0.0	3 - 4' - SILTY CLAY (CL-ML): ORGANIC SILTY CLAY; DARKLY STREAKED.
		0.0	4 - 5' - NO RECVOERY; LARGE ROCK CLEARED FROM INTERVAL.
5		8.5	5 - 8' - SANDY CLAY (CLS): RED/ORANGE.
		112	
	SB-7 (8')	23	
		18.4	8 - 8.25' - SANDY CLAY (CLS): SMALL SAND LENS; DARK IN COLOR; STAINED; ROUNDED; SATURATION.
10		2.5	8.25 - 9' - SANDY CLAY (CLS): WHITE, CLEAN SAND WITH ORANGE CLAY; ANGULAR MIXED.
		11.2	9 - 10' - SILTY CLAY (CL-ML): DARK IN COLOR; DRY.
		9.2	10 - 12.5' - SANDY CLAY (CLS): STAINED; ANGULAR TO SUBANGULAR.
	SB-7 (13')	230	12.5 - 13' - SAND (SW): VERY COARSE; WEAK PETROLEUM ODOR; LOW MOISTURE.
			13' - REFUSAL AT 13' BGS.
15			
20			
25			
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GRAPHIC LOG

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MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-8**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 18.5' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		2.7	0.5 - 1' - FILL: LARGE COBBLES.
		0.0	1 - 2' - CLAYEY SAND (SC): DARK GREY; DRY.
		0.0	2 - 3' - CLAYEY SAND (SC): DARK GREY; LESS SAND AND MORE CLAY THAN PREVIOUS INTERVAL.
		0.0	3 - 4' - NO RECOVERY: ROCKIER - NO RECOVERABLE MATERIAL IN SIGNIFICANT QUANTITY.
5		1.2	4 - 5' - SANDY CLAY (CLS): ORANGE-BROWN; ROUNDED - SOME SEMI-ANGULAR; LIMITED RECOVERY; STRONG ODOR DURING AIR KNIFING.
		32	5 - 6' - SILTY CLAY (CL-ML): RED/ORANGE IN COLOR; LOW TO NO ODOR; LOW PLASTICITY.
		165	6 - 9' - SANDY CLAY (CLS): STRONGER ODOR; 7 - 7.5' BGS - STRONG ODOR; STAINED. DRY SANDY TO GRAVELLY CLAY.
		8.4	9 - 10' - GRAVELLY CLAY (CLG): LOW PLASTICITY; DRY.
		9.2	10 - 18.5' - SILTY CLAY (CL-ML): TAN/ORANGE; FINE; DRY.
10	SB-8 (10')	264	
		2.7	
		1.3	
		7.0	
		3.4	
15	SB-8 (15')	20.3	
		1.2	
		0.3	
		0.1	
			18.5' - REFUSAL AT 18.5' BGS.
20			
25			
30			
35			

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MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-9**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 11.5' BGS.
SATURATED ZONE: 3.5 - 4.5' BGS.

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0			0 - 0.5' - ASPHALT.	
		1.2	0.5 - 1.5' - SILTY CLAY (CL-ML): YELLOWISH-ORANGE; MOTTLING; DARK ORGANIC SOIL; SOME FINE SANDS; DRY.	
		0.0		
		0.0	1.5 - 3.5' - SANDY CLAY (CLS): YELLOWISH-ORANGE; LESS ORGANICS; COARSER SANDS; 40% SUB-ROUNDED; DRY.	
		0.0		
		0.0	3.5 - 4.5' - CLAY (CH): YELLOWISH-ORANGE; VERY HIGH PLASTICITY; HIGH MOISTURE.	
5		0.0		
		0.0	4.5 - 6' - SANDY CLAY (CLS): RED IN COLOR; SUBANGULAR; LOW PLASTICITY.	
		9.7	6 - 9' - SILTY CLAY (CL-ML): RED.	
		1.1		
	SB-9 (9')	6.5		
10	**SB-9 (10.5')**	705	9 - 10.5' - SANDY GRAVEL (GWS): LIGHTER GREY; MIXED WITH CLAY - VERY LOW PLASTICITY; LOW MOISTURE; SLIGHT STAINING.	
			10.5 - 11.5 - SILTY SAND (SM): GREY; DARKER AND STAINED; MEDIUM PLASTICITY; PETROLEUM ODOR; SAND IS SUB-ROUNDED; MEDIUM TO LOW MOISTURE.	
			11.5 - REFUSAL AT 11.5' BGS.	
15				
20				
25				
30				
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BA

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-10**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 21.5' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0		0.0	0 - 0.5' - ASPHALT.
		0.0	0.5 - 3' - FILL: DARK ORGANIC ROOTS.
		24	
		0.0	3 - 4' - SILTY CLAY (CL-ML): MEDIUM PLASTICITY; ODOR.
		0.0	4 - 5' - NO RECOVERY: HEAVY ODOR; 1,000 HEADSPACE PID IN BORING.
5		0.0	5 - 10' - SANDY CLAY (CLS): DARK GREY; PID MATERIAL MOIST; ANGULAR; MEDIUM PLASTICITY; MOIST.
		0.0	
		0.0	
		0.0	
		0.0	
10		0.0	10 - 11' - GRAVELLY CLAY (CLS): YELLOW-ORANGE AND GREY IN COLOR; SANDY.
		0.4	11 - 15' - SILTY CLAY (CL-ML): YELLOW-ORANGE; FINE; MEDIUM PLASTICITY; NO TO VERY LOW ODOR.
		0.5	
		2.1	
		3.8	
15	SB-10 (15')	1.4	15 - 20 - SILTY CLAY (CL-ML): DISCOLORED; FINE; SAME CONSISTENCY AS ABOVE; TRANSITIONS TO NORMAL COLORATION; LOW PLASTICITY.
		11	
		3.0	
		6.0	
	SB-10 (19')	0.3	
20		32.4	20 - 21' - SILTY CLAY (CL-ML): DISCOLORED; FINE; SAME CONSISTENCY AS ABOVE; TRANSITIONS TO NORMAL COLORATION; LOW PLASTICITY; SATURATED.
	SB-10 (21.5')	181	21 - 21.5' - GRAVELLY CLAY (CLG): TIGHT.
			21.5' - REFUSAL AT 21.5' BGS.
25			
30			
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BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

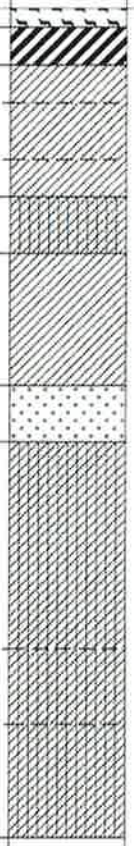
WELL NO.: SB-11/MW-2

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 22' BGS.
SATURATED ZONE: N/A
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - FILL: BLACK ORGANIC SOD.
			0.5 - 1.5' - CLAY (CH): ORANGE-YELLOW; HIGH PLASTICITY.
			1.5 - 2.5' - SANDY CLAY (CLS): YELLOWISH-ORANGE STREAKS; HIGH MOISTURE; MUCH SANDIER; HIGH PLASTICITY; DARK OVERALL; NO ODOR; VERY FINE SANDS - CONTAINS SMALL LENSES OF WHITE SAND.
5			2.5 - 4' - SANDY CLAY (CLS): YELLOWISH-ORANGE STREAKS; MUCH SANDIER; HIGH PLASTICITY; DARK OVERALL; NO ODOR; VERY FINE SANDS - CONTAINS SMALL LENSES OF WHITE SAND; HIGHER MOISTURE - NOT SATURATED, BUT EXTREMELY MOIST; WELL ROUNDED.
10			4 - 5' - SANDY CLAY (CLS): YELLOWISH-ORANGE STREAKS; MUCH SANDIER; HIGH PLASTICITY; DARK OVERALL; NO ODOR; VERY FINE SANDS - CONTAINS SMALL LENSES OF WHITE SAND; HIGHER MOISTURE - NOT SATURATED, BUT EXTREMELY MOIST; WELL ROUNDED; STRONG ODOR IN BOREHOLE - HEADSPACE READING >250.
15			5 - 6.5' - SILTY CLAY (CL-ML): GREY; HIGH PLASTICITY.
			6.5 - 10' - SANDY CLAY (CLS): YELLOWISH-ORANGE CLAY, MIXED WITH GREY-WHITE SANDS; MEDIUM MOISTURE CONTENT; MOIST - BUT NOT SATURATED - POTENTIAL WATER SOURCE.
20			10 - 11.5' - SAND (SW): YELLOW IN COLOR; DRY.
			11.5 - 17' - SILTY CLAY (CL-ML): GREY, EXTREMELY TIGHT CLAY - SILTY; LOW PLASTICITY.
25			17 - 19' - SILTY CLAY (CL-ML): GREY, EXTREMELY TIGHT CLAY - SILTY; LOW PLASTICITY; DRIER.
			19 - 22' - SILTY CLAY (CL-ML): GREY, EXTREMELY TIGHT CLAY - SILTY; LOW PLASTICITY; TIGHTER.
			22' - REFUSAL AT 22' BGS.
30			BA
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

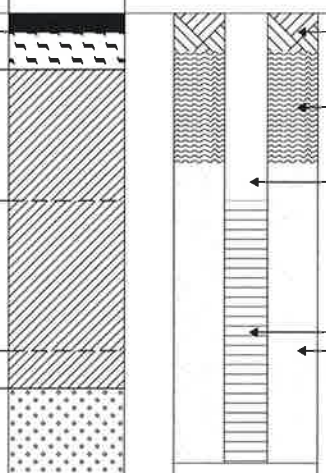
WELL NO.: SB-12/MW-5

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 13.5' BGS.
SATURATED ZONE: 9 - 13.5' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0		0	0 - 0.5' - ASPHALT.
		0	0.5 - 1.5' - FILL: ROCKY.
		0	1.5 - 5' - SANDY CLAY (CLS): YELLOW-ORANGE; HIGH PLASTICITY.
		0	
		0	
5		0	5 - 9' - SANDY CLAY (CLS): YELLOW-ORANGE; MEDIUM PLASTICITY; 70% RECOVERY.
		0	
		0	
		0	
	SB-12/MW-5 (9')	0	9 - 10' - SANDY CLAY (CLS): YELLOW-ORANGE; LOWER SAND VOLUME; SATURATION AT 9' BGS.
10		0	10 - 13.5' - SAND (SW): WHITE; SATURATED; 60% RECOVERY.
		0	
		0	
		0	
		0	13.5' - REFUSAL AT 13.5' BGS.
15			
20			
25			
30			
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS

BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

WELL NO.: SB-13/MW-6

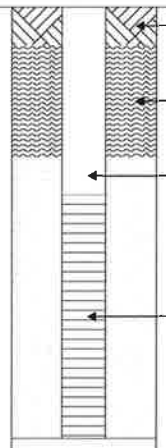
PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 12.5' BGS.
SATURATED ZONE: 10.5 - 12.5' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0		0	0 - 0.25' - FILL: GRASS/SOD.
		0	0.25 - 1' - SANDY CLAY (CLS): DARK YELLOW-ORANGE; MIXED WITH ORGANIC MATERIAL.
		0	1 - 5' - SANDY CLAY (CLS): DARK YELLOW-ORANGE; SANDSTONE COBBLE INCLUSIONS.
		0	
		0	
5		0	5 - 10' - CLAY (CH): GREY/WHITE/YELLOW; 80% RECOVERY; HIGH PLASTICITY; MEDIUM MOISTURE.
		0	
		0	
		0	
		0	
10		0	10 - 12.5' - CLAY (CH): GREY/WHITE/YELLOW; 70% RECOVERY; HIGH PLASTICITY; SATURATION PRESENT.
		0	
		0	
			12.5 - REFUSAL AT 12.5' BGS - SANDSTONE.
15			
20			BA
25			
30			
35			

GRAPHIC LOG

WELL CONSTRUCTION DETAILS



MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

WELL NO.: SB-14/MW-7

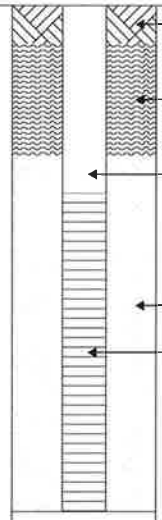
PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 13.5' BGS.
SATURATED ZONE: 13' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 9/8/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.25' - FILL: GRASS/SOD.
		0	0.25 - 1' - FILL.
		0	1 - 2' - SANDY CLAY (CLS): YELLOW-ORANGE.
		0	2 - 3' - SANDY CLAY (CLS): YELLOW-ORANGE; TIGHTER; MORE CLAYEY.
		0	3 - 5' - SANDY CLAY (CLS): YELLOW-ORANGE; LESS CLAYEY - MORE SANDY.
5	SB-14/MW-7 (6')	0	5 - 10' - SANDY CLAY (CLS): YELLOW-ORANGE; 80% RECOVERY; MEDIUM PLASTICITY; LOW TO MEDIUM MOISTURE.
		4.1	
	SB-14/MW-7 (7')	12.2	
		6.3	
		2.2	
10		0	10 - 13.5' - SANDY CLAY (CLS): YELLOW-ORANGE; MEDIUM PLASTICITY; TRANSITIONS TO WHITE SAND AT 13' BGS; SATURATED.
	SB-14/MW-7 (11')	0.3	
	SB-14/MW-7 (12')	2.1	
		0	
			13.5' - REFUSAL AT 13.5' BGS - SAND.
15			
20			
25			
30			
35			

GRAPHIC LOG

WELL CONSTRUCTION DETAILS



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MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-15**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 12.5' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0			0 - 0.25' - FILL: GRASS/SOD.	
		0	0.25 - 1' - FILL.	
		0	1 - 10' - SANDY CLAY (CLS): YELLOW-ORANGE; TRANSITIONS TO DARKER ORGANICS - THEN TO SANDSTONE COBBLES - THEN TO SANDY YELLOW-ORANGE CLAY, WITH ARCOSE SANDSTONE INCLUSIONS; 80% RECOVERY FROM 5 - 10' BGS.	
		0		
		0		
5		0		
		0		
		0		
		0		
		0		
10		0	10 - 12.5' - SANDY CLAY (CLS): YELLOW-ORANGE (HIGHER YELLOW CONTENT); TRANSITIONS TO DARKER ORGANICS - THEN TO SANDSTONE COBBLES - THEN TO SANDY YELLOW-ORANGE CLAY, WITH ARCOSE SANDSTONE INCLUSIONS - RED/PINK IN COLOR; 50% RECOVERY;	
		0		
	SB-15 (12')	0		
			12.5' - REFUSAL AT 12.5' BGS. - SANDY CLAY.	
15				
			BA	
20				
25				
30				
35				

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-16**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 14' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0		0	0 - 0.5' - ASPHALT.	
			0.5 - 1.5' - FILL.	
		0	1.5 - 5' - SANDY CLAY (CLS): YELLOW-ORANGE; TRANSITIONS TO SANDSTONE COBBLES - THEN BACK TO YELLOW-ORANGE SANDY CLAY.	
		0		
		0		
5		0	5 - 6' - SAND (SW): DRY; NO PLASTICITY.	
		0	6 - 14' - SANDY CLAY (CLS): MIXED WITH SANDSTONE COBBLES; MEDIUM PLASTICITY; 80% RECOVERY.	
		0		
		0		
		0		
10		0		
		0		
		0		
		0		
	SB-16 (13.5')	0	14' - REFUSAL AT 14' BGS - SANDTONE.	
15				
20			BA	
25				
30				
35				

MOUNTAIN RESEARCH, LLC
SOIL BORING LOG

BORING NO.: **SB-17**

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 13' BGS.
SATURATED ZONE: N/A

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION	GRAPHIC LOG
0		0	0 - 0.5' - ASPHALT.	
			0.5 - 1.5' - FILL.	
		0	1.5 - 5' - SANDY CLAY (CLS): YELLOW-ORANGE; SOFT DIG REFUSAL AT 5' BGS.	
		0		
		0		
5		0	5 - 10' - CLAY (CL): YELLOW/TAN IN COLOR; EXTREMELY DRY; LOW PLASTICITY; 80% RECOVERY.	
		0		
		0		
		0		
		0		
10		0	10 - 13' - CLAY (CL): YELLOW/ORANGE IN COLOR; SLIGHTLY MORE MOISTURE; 80% RECOVERY.	
		0		
	SB-17 (12.5')	0		
		0	13' - REFUSAL AT 13' BGS - SANDSTONE.	
15				
20			BA	
25				
30				
35				

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

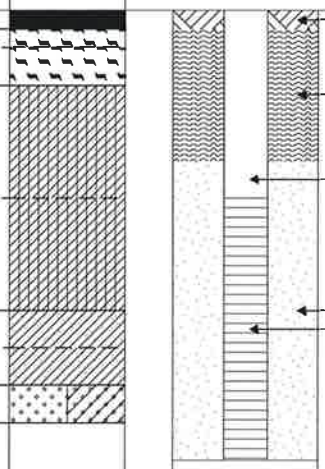
WELL NO.: SB-4/MW-1

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 11' BGS.
SATURATED ZONE: 8 - 10' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		0.0	0.5 - 1' - FILL: LARGE AMOUNTS OF ROCKS - FILL.
		0.0	
		0.0	1 - 2' - FILL: DARK ORGANIC FILL.
		0.0	2 - 5' - SILTY CLAY (CL-ML): YELLOWISH IN COLOR; HIGH PLASTICITY; LOW MOISTURE; LESS DARK.
		0.0	
5		0.0	
		3.6	5 - 8' - SILTY CLAY (CL-ML): YELLOW-ORANGE; LOW PLASTICITY; LOW MOISTURE.
		0.3	
		0.0	8 - 9' - SANDY CLAY (CLS): ORANGE; POTENTIALLY WATER AROUND 8 - 9' BGS.
		0.0	
10		0.0	9 - 10' - SANDY CLAY (CLS): DARKER ORANGE; MIXED WITH HEAVY, COARSE RED SAND.
	SB-4/MW-1 (11')	0.0	10 - 11' - CLAYEY SAND (SW-SC): YELLOW-ORANGE; COARSE; SOME CLAYS - ORANGE; SATURATION PRESENT.
			11' - REFUSAL AT 11' BGS.
15			
20			
25			
30			
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS

- CONCRETE 0 - 0.5'
- BENTONITE 0.5 - 4'
- PVC RISER DIA 2" 0 - 5'
- FILTER SAND 4 - 12'
- WELL SCREEN DIA 2" SLOT 0.020 5 - 12'

BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

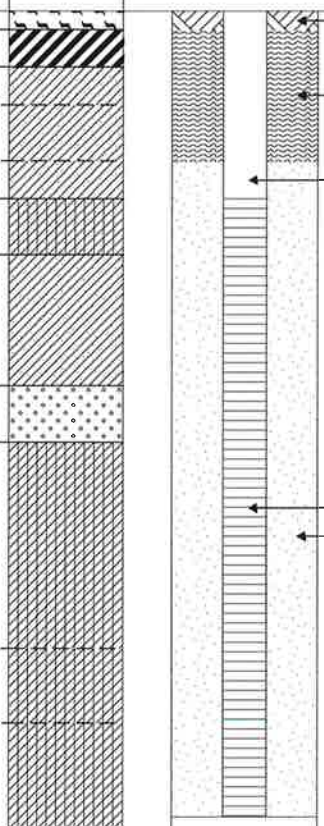
WELL NO.: SB-11/MW-2

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 22' BGS.
SATURATED ZONE: N/A
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - FILL: BLACK ORGANIC SOD.
		0.7	0.5 - 1.5' - CLAY (CH): ORANGE-YELLOW; HIGH PLASTICITY.
		27.2	1.5 - 2.5' - SANDY CLAY (CLS): YELLOWISH-ORANGE STREAKS; HIGH MOISTURE; MUCH SANDIER; HIGH PLASTICITY; DARK OVERALL; NO ODOR; VERY FINE SANDS - CONTAINS SMALL LENSES OF WHITE SAND.
		0	
		0	
5		2.4	
		1.8	
		8.3	2.5 - 4' - SANDY CLAY (CLS): YELLOWISH-ORANGE STREAKS; MUCH SANDIER; HIGH PLASTICITY; DARK OVERALL; NO ODOR; VERY FINE SANDS - CONTAINS SMALL LENSES OF WHITE SAND; HIGHER MOISTURE - NOT SATURATED, BUT EXTREMELY MOIST; WELL ROUNDED.
		3.4	
		0.6	
10		0.3	
		6.2	
		8.4	4 - 5' - SANDY CLAY (CLS): YELLOWISH-ORANGE STREAKS; MUCH SANDIER; HIGH PLASTICITY; DARK OVERALL; NO ODOR; VERY FINE SANDS - CONTAINS SMALL LENSES OF WHITE SAND; HIGHER MOISTURE - NOT SATURATED, BUT EXTREMELY MOIST; WELL ROUNDED; STRONG ODOR IN BOREHOLE - HEADSPACE READING - >250.
		0.6	
		0.1	
15		0.1	
		0.4	
		0	
		8.7	5 - 6.5' - SILTY CLAY (CL-ML): GREY; HIGH PLASTICITY.
	SB-11/MW-2 (19')	97.5	
20		0.5	6.5 - 10' - SANDY CLAY (CLS): YELLOWISH-ORANGE CLAY, MIXED WITH GREY-WHITE SANDS; MEDIUM MOISTURE CONTENT; MOIST - BUT NOT SATURATED - POTENTIAL WATER SOURCE.
		0.6	
		2.4	
			10 - 11.5' - SAND (SW): YELLOW IN COLOR; DRY.
			11.5 - 17' - SILTY CLAY (CL-ML): GREY, EXTREMELY TIGHT CLAY - SILTY; LOW PLASTICITY.
25			17 - 19' - SILTY CLAY (CL-ML): GREY, EXTREMELY TIGHT CLAY - SILTY; LOW PLASTICITY; DRIER.
			19 - 22' - SILTY CLAY (CL-ML): GREY, EXTREMELY TIGHT CLAY - SILTY; LOW PLASTICITY; TIGHTER.
30			22' - REFUSAL AT 22' BGS.
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS

CONCRETE 0 - 0.5'

BENTONITE 0.5 - 4'

PVC RISER DIA 2" 0 - 5'

WELL SCREEN DIA 2" SLOT 0.020 5 - 21.5'

FILTER SAND 4 - 22'

BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

WELL NO.: SB-1/MW-3

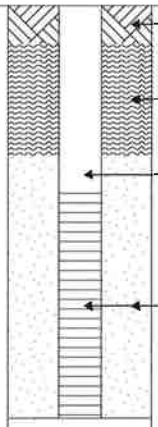
PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 11' BGS.
SATURATED ZONE: N/A
TOC ELEVATION:

WEATHER: SUN/90'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		95	0.5 - 1.5' - SANDY CLAY (CLS): FILL AND ROCKY, LARGE SOILS AT TOP OF INTERVAL; BROWN/GREY COLORATION; TRANSITIONS TO FINE SANDY CLAY, TO CLAYEY SAND AT END OF INTERVAL.
		2,000	
		7.6	
		0.0	1.5 - 3' - SANDY CLAY (CLS): MORE CLAY - LESS ROCKS AND SAND; DARKER IN COLOR THAN PREVIOUS INTERVAL.
5		0.0	
		0.0	
		0.0	3 - 4' - SANDY CLAY (CLS): MORE SAND CONTENT; TAN COLORATION; DRIER.
		0.0	4 - 6' - SANDY CLAY (CLS): MORE CLAY CONTENT.
		0.0	
		0.0	6 - 7' - SANDY CLAY (CLS): MORE SAND CONTENT; DRIER.
10	SB-1/MW-3 (11')	0.0	7 - 8' - SANDY CLAY (CLS): INCREASED SAND CONTENT; MOISTURE AT BOTTOM OF INTERVAL; HEAVY CLAY; VERY LOW PLASTICITY IN SANDY ZONE - SOME IN CLAY ZONE.
			8 - 8.5' - GRAVEL: SMALL COBBLES/LARGE GRAVEL.
15			8.5 - 9' - SAND: COARSE.
			9 - 11' - NO RECOVERY.
			11' - REFUSAL AT 11' BGS.
20			
25			
30			
35			

GRAPHIC LOG

WELL CONSTRUCTION DETAILS



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MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

WELL NO.: SB-8/MW-4

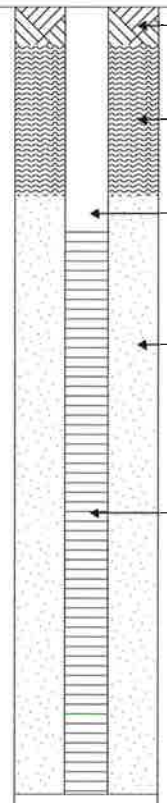
PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 21' BGS.
SATURATED ZONE: N/A
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		2.7	0.5 - 1' - FILL: LARGE COBBLES.
		0.0	1 - 2' - CLAYEY SAND (SC): DARK GREY; DRY.
		0.0	2 - 3' - CLAYEY SAND (SC): DARK GREY; LESS SAND AND MORE CLAY THAN PREVIOUS INTERVAL.
		0.0	3 - 4' - NO RECOVERY: ROCKIER - NO RECOVERABLE MATERIAL IN SIGNIFICANT QUANTITY.
5		1.2	
		32	4 - 5' - SANDY CLAY (CLS): ORANGE-BROWN; ROUNDED - SOME SEMI-ANGULAR; LIMITED RECOVERY; STRONG ODOR DURING AIR KNIFING.
		165	
		8.4	
		9.2	5 - 6' - SILTY CLAY (CL-ML): RED/ORANGE IN COLOR; LOW TO NO ODOR; LOW PLASTICITY.
10	SB-8/MW-4 (10')	264	6 - 9' - SANDY CLAY (CLS): STRONGER ODOR; 7 - 7.5' BGS - STRONG ODOR; STAINED, DRY SANDY TO GRAVELLY CLAY.
		2.7	
		1.3	
		7.0	9 - 10' - GRAVELLY CLAY (CLG): LOW PLASTICITY; DRY.
		3.4	10 - 21' - SILTY CLAY (CL-ML): TAN/ORANGE; FINE; DRY.
15	SB-8/MW-4 (15')	20.3	
		1.2	
		0.3	
		0.1	
20			21' - REFUSAL AT 21' BGS - SILTY CLAY.
25			BA
30			
35			

GRAPHIC LOG

WELL CONSTRUCTION DETAILS



MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

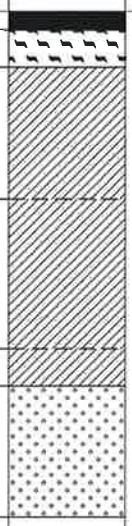
WELL NO.: SB-12/MW-5

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 13.5' BGS.
SATURATED ZONE: 9 - 13.5' BGS.
TOC ELEVATION:

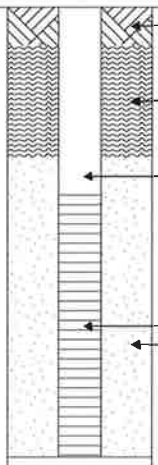
WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0		0	0 - 0.5' - ASPHALT.
		0	0.5 - 1.5' - FILL: ROCKY.
		0	1.5 - 5' - SANDY CLAY (CLS): YELLOW-ORANGE; HIGH PLASTICITY.
		0	
		0	
5		0	5 - 9' - SANDY CLAY (CLS): YELLOW-ORANGE; MEDIUM PLASTICITY; 70% RECOVERY.
		0	
		0	
		0	
	SB-12/MW-5 (9')	0	9 - 10' - SANDY CLAY (CLS): YELLOW-ORANGE; LOWER SAND VOLUME; SATURATION AT 9' BGS.
10		0	10 - 13.5' - SAND (SW): WHITE; SATURATED; 60% RECOVERY.
		0	
		0	
		0	
			13.5' - REFUSAL AT 13.5' BGS.
15			
20			BA
25			
30			
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS



MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

WELL NO.: SB-13/MW-6

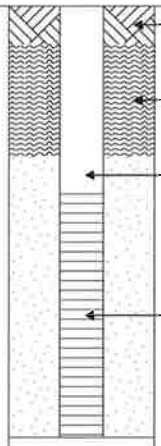
PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 12.5' BGS.
SATURATED ZONE: 10.5 - 12.5' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 9/7/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0		0	0 - 0.25' - FILL: GRASS/SOD.
		0	0.25 - 1' - SANDY CLAY (CLS): DARK YELLOW-ORANGE; MIXED WITH ORGANIC MATERIAL.
		0	1 - 5' - SANDY CLAY (CLS): DARK YELLOW-ORANGE; SANDSTONE COBBLE INCLUSIONS.
5		0	5 - 10' - CLAY (CH): GREY/WHITE/YELLOW; 80% RECOVERY; HIGH PLASTICITY; MEDIUM MOISTURE.
10		0	10 - 12.5' - CLAY (CH): GREY/WHITE/YELLOW; 70% RECOVERY; HIGH PLASTICITY; SATURATION PRESENT.
		0	12.5 - REFUSAL AT 12.5' BGS - SANDSTONE.
15			
20			
25			
30			
35			

GRAPHIC LOG

WELL CONSTRUCTION DETAILS



CONCRETE 0 - 1'
BENTONITE 1 - 4'
PVC RISER 2" 0 - 5'
WELL SCREEN DIA 2" SLOT 0.010 5 - 11.5'

BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

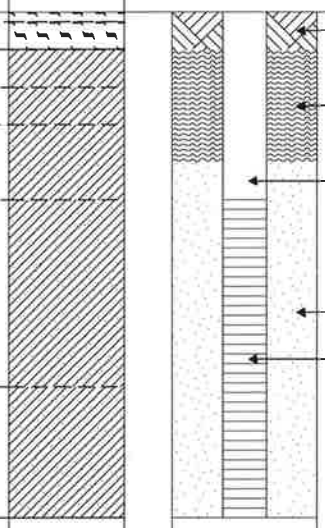
WELL NO.: SB-14/MW-7

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 13.5' BGS.
SATURATED ZONE: 13' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: DAVE BENNETT
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 9/8/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0		0	0 - 0.25' - FILL: GRASS/SOD.
		0	0.25 - 1' - FILL.
		0	1 - 2' - SANDY CLAY (CLS): YELLOW-ORANGE.
		0	2 - 3' - SANDY CLAY (CLS): YELLOW-ORANGE; TIGHTER; MORE CLAYEY.
		0	3 - 5' - SANDY CLAY (CLS): YELLOW-ORANGE; LESS CLAYEY - MORE SANDY.
5	SB-14/MW-7 (6')	4.1	5 - 10' - SANDY CLAY (CLS): YELLOW-ORANGE; 80% RECOVERY; MEDIUM PLASTICITY; LOW TO MEDIUM MOISTURE.
	SB-14/MW-7 (7')	12.2	
		6.3	
		2.2	
10		0	10 - 13.5' - SANDY CLAY (CLS): YELLOW-ORANGE; MEDIUM PLASTICITY; TRANSITIONS TO WHITE SAND AT 13' BGS; SATURATED.
	SB-14/MW-7 (11')	0.3	
	SB-14/MW-7 (12')	2.1	
		0	
			13.5' - REFUSAL AT 13.5' BGS - SAND.
15			
20			
25			
30			
35			

GRAPHIC LOG



WELL CONSTRUCTION DETAILS

BA

MOUNTAIN RESEARCH, LLC
MONITORING WELL LOG

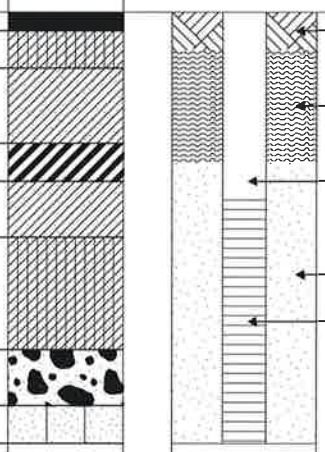
WELL NO.: SB-9/MW-8

PROJECT NO.: 4644.15.01
PROJECT NAME: SOIL BORING/MW INSTALL
CLIENT: VENNARD'S
LOCATION: INDIANA, PA
DEPTH: REFUSAL AT 11.5' BGS.
SATURATED ZONE: 3.5 - 4.5' BGS.
TOC ELEVATION:

WEATHER: SUN/80'S
LOGGED BY: BEN AZAR
DRILLING METHOD: DIRECT PUSH
OPERATOR: MATT SNYDER
BOREHOLE COMPLETION: SOIL BORING/MONITORING WELL
DATE: 6/22/2016
BOREHOLE DIAMETER: 2.25"

DEPTH SCALE	SAMPLE NO.	PID (PPM)	LITHOLOGY DESCRIPTION
0			0 - 0.5' - ASPHALT.
		1.2	0.5 - 1.5' - SILTY CLAY (CL-ML): YELLOWISH-ORANGE; MOTTLING; DARK ORGANIC SOIL; SOME FINE SANDS; DRY.
		0.0	
		0.0	
		0.0	1.5 - 3.5' - SANDY CLAY (CLS): YELLOWISH-ORANGE; LESS ORGANICS; COARSER SANDS; 40% SUB-ROUNDED; DRY.
5		0.0	
		0.0	3.5 - 4.5' - CLAY (CH): YELLOWISH-ORANGE; VERY HIGH PLASTICITY; HIGH MOISTURE.
		9.7	4.5 - 6' - SANDY CLAY (CLS): RED IN COLOR; SUBANGULAR; LOW PLASTICITY.
		1.1	
	SB-9/MW-8 (9')	6.5	6 - 9' - SILTY CLAY (CL-ML): RED.
10	SB-9/MW-8 (10.5')	705	9 - 10.5' - SANDY GRAVEL (GWS): LIGHTER GREY; MIXED WITH CLAY - VERY LOW PLASTICITY; LOW MOISTURE; SLIGHT STAINING.
			10.5 - 11.5 - SILTY SAND (SM): GREY; DARKER AND STAINED; MEDIUM PLASTICITY; PETROLEUM ODOR; SAND IS SUB-ROUNDED; MEDIUM TO LOW MOISTURE.
15			11.5 - REFUSAL AT 11.5' BGS.
		17.1	
20			
25			
30			
35			

GRAPHIC LOG



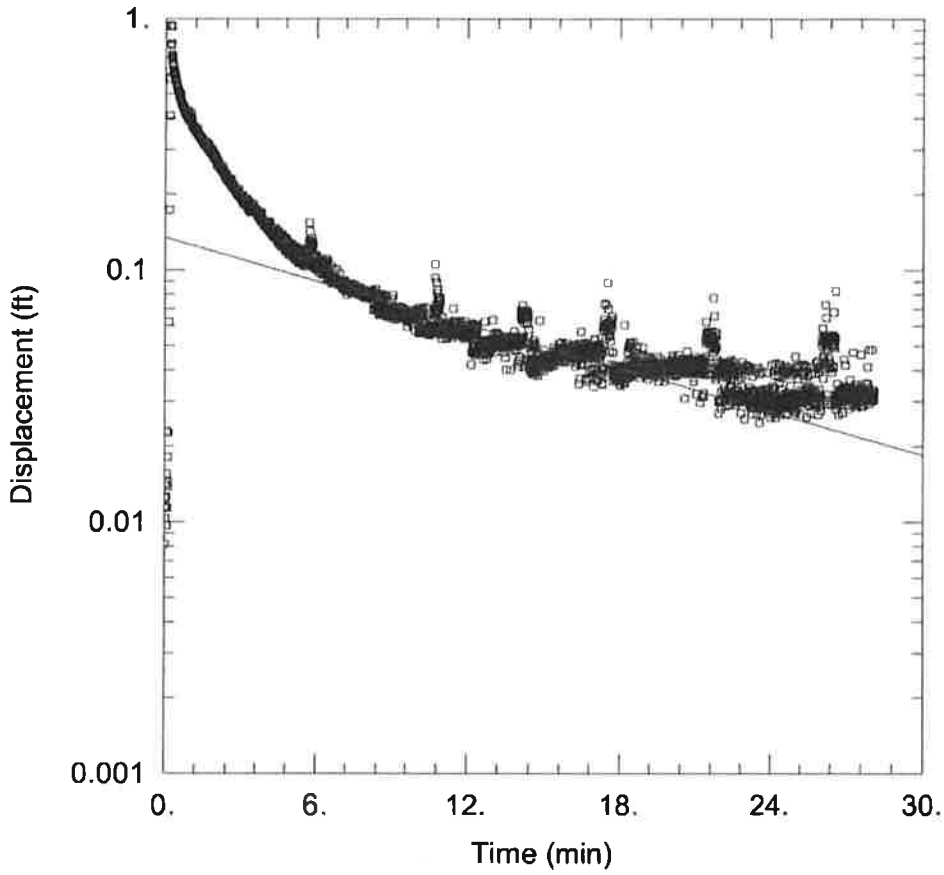
WELL CONSTRUCTION DETAILS

- CONCRETE 0 - 1'
- BENTONITE 1 - 4'
- PVC RISER DIA 2" 0 - 5'
- FILTER SAND 4 - 11.5'
- WELL SCREEN DIA 2" SLOT 0.020 5 - 11.5'

BA

APPEN DIX H

SLUG TEST ANALYSES



MW-2 FALLING HEAD

Data Set: H:\...\MW-2 Falling Head.aqt
Date: 09/29/16 Time: 11:42:36

PROJECT INFORMATION

Company: Mountain Research
Client: Vennard's
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-2
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 12.25 ft Anisotropy Ratio (Kz/Kr): 1.

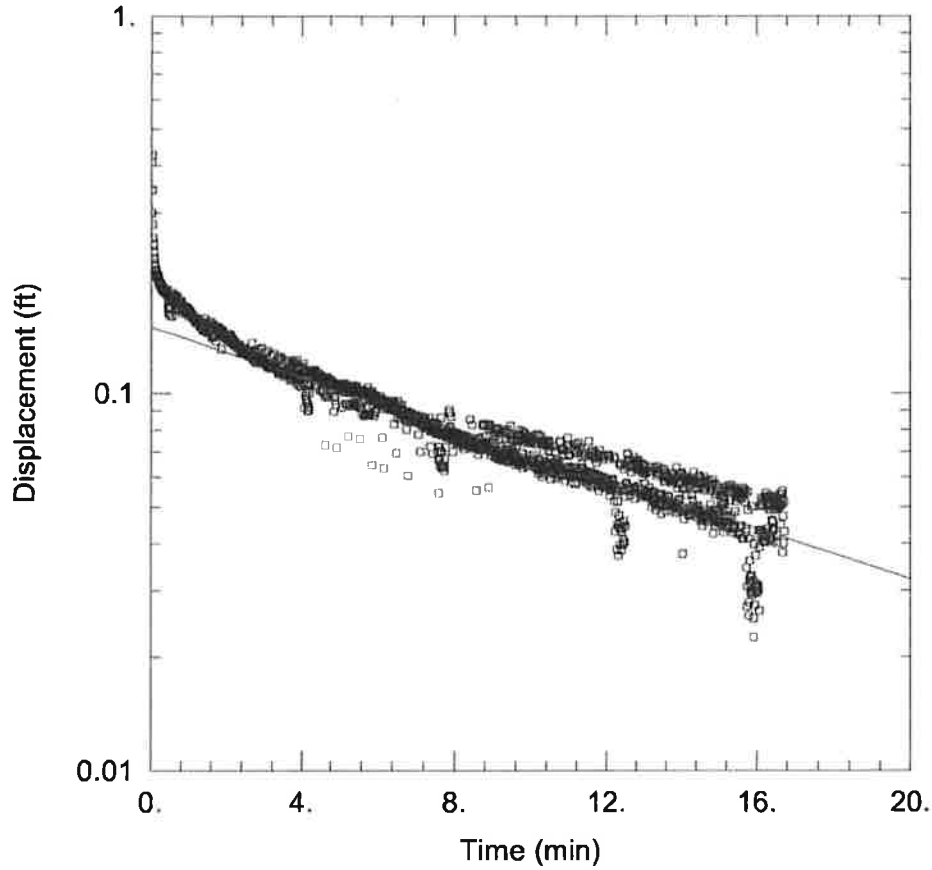
WELL DATA (MW-2)

Initial Displacement: 0.9362 ft
Total Well Penetration Depth: 12.25 ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.25 ft
Screen Length: 16.5 ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.05952 ft/day y0 = 0.1343 ft



MW-2 RISING HEAD

Data Set: H:\...\MW-2 Rising Head.aqt
Date: 09/29/16 Time: 11:42:43

PROJECT INFORMATION

Company: Mountain Research
Client: Vennard's
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-2
Test Date: 9/19/2016

AQUIFER DATA

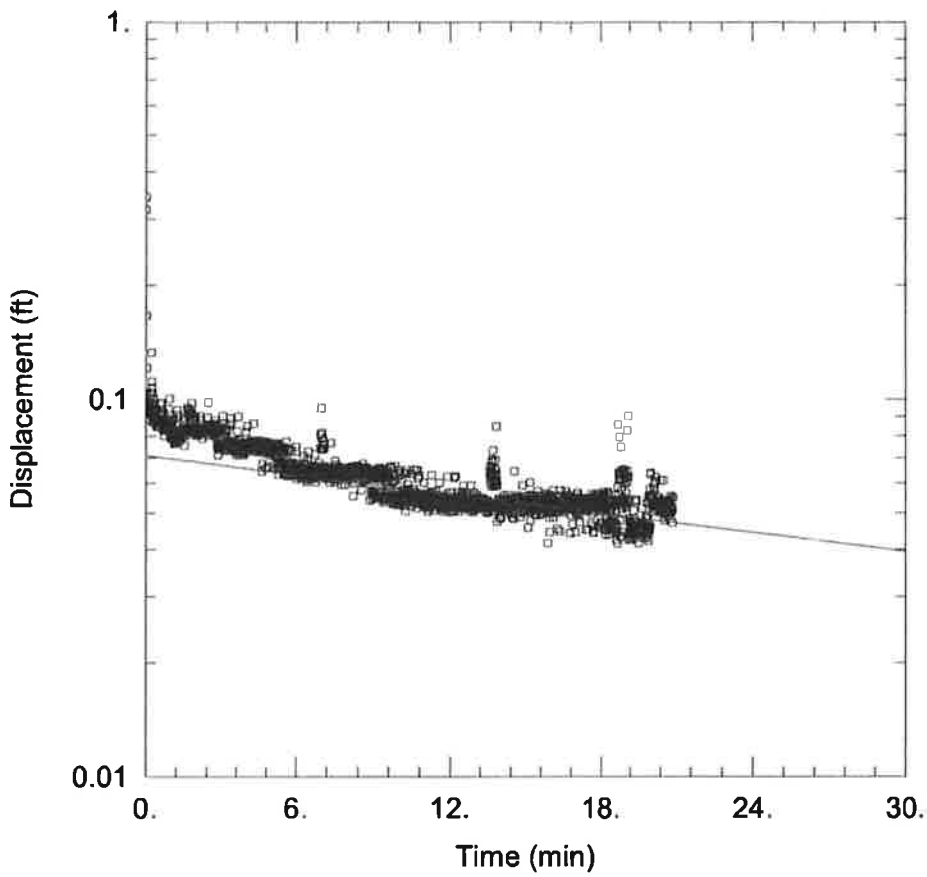
Saturated Thickness: 12.3 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 0.409 ft
Total Well Penetration Depth: 12.3 ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.3 ft
Screen Length: 16.5 ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.06905 ft/day
y0 = 0.1496 ft



MW-3 FALLING HEAD

Data Set: H:\...\MW-3 Falling Head.aqt
Date: 09/29/16 Time: 11:42:53

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-3
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 2.36 ft Anisotropy Ratio (Kz/Kr): 1.

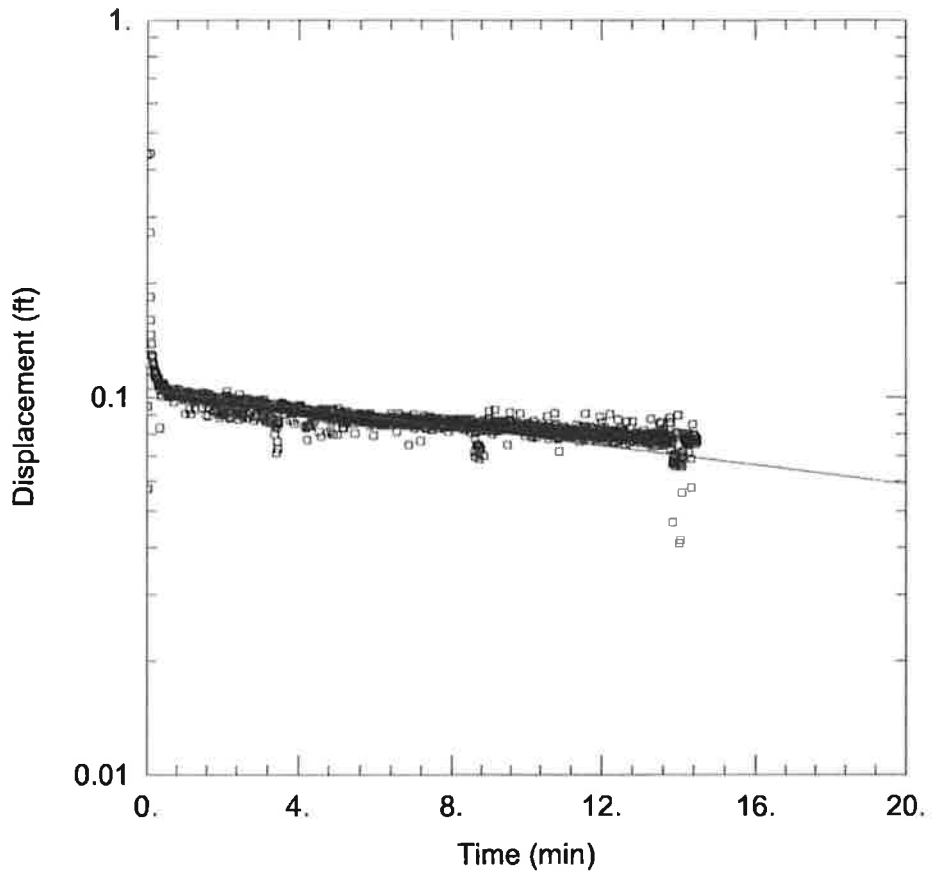
WELL DATA (MW-3)

Initial Displacement: 0.343 ft Static Water Column Height: 2.36 ft
Total Well Penetration Depth: 2.36 ft Screen Length: 6. ft
Casing Radius: 0.083 ft Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02795 ft/day y0 = 0.07087 ft



MW-3 RISING HEAD

Data Set: H:\...\MW-3 Rising Head.aqt
Date: 09/29/16 Time: 11:42:59

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-3
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 2.3 ft Anisotropy Ratio (Kz/Kr): 1.

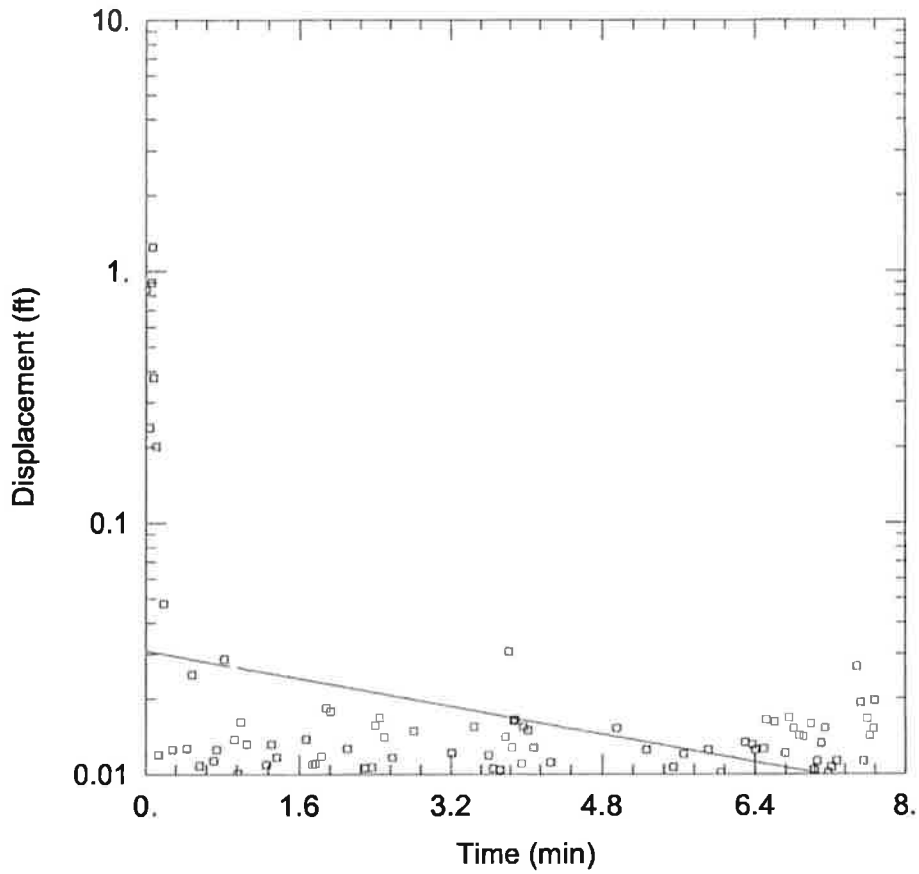
WELL DATA (MW-3)

Initial Displacement: 0.439 ft
Total Well Penetration Depth: 2.3 ft
Casing Radius: 0.083 ft
Static Water Column Height: 2.3 ft
Screen Length: 6. ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.04133 ft/day
y0 = 0.1055 ft



MW-4 FALLING HEAD

Data Set: H:\...\MW-4 Falling Head.aqt
Date: 09/29/16 Time: 11:43:06

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-4
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 10.65 ft Anisotropy Ratio (Kz/Kr): 1.

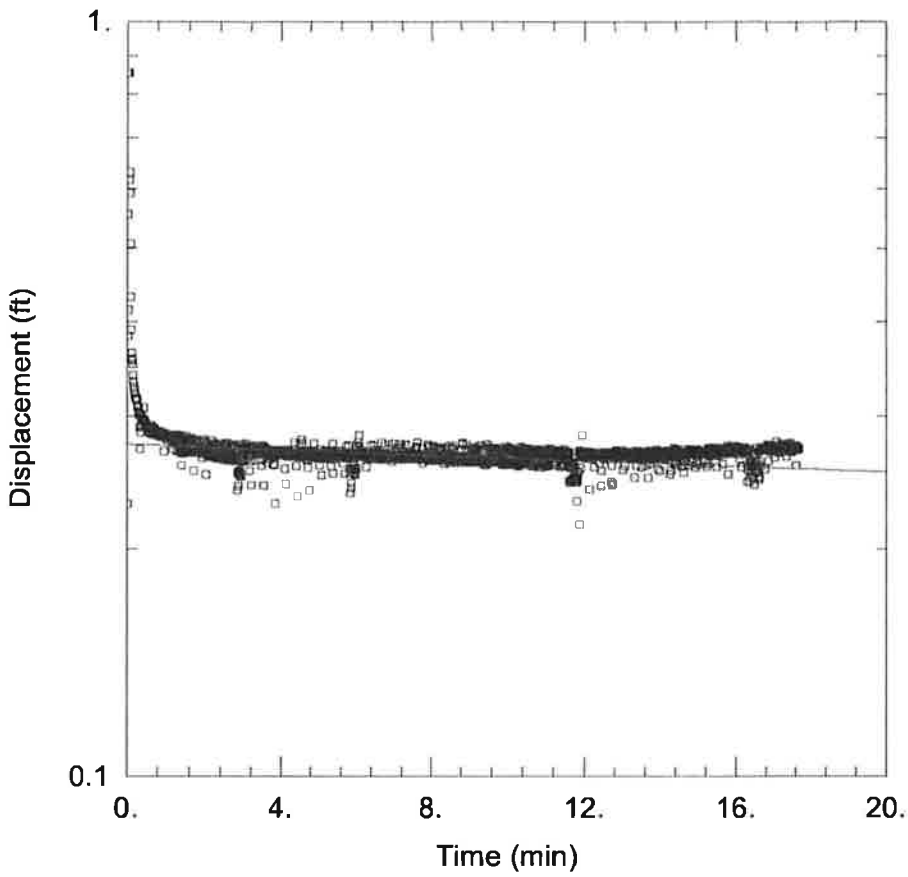
WELL DATA (MW-4)

Initial Displacement: 0.843 ft
Total Well Penetration Depth: 10.65 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.65 ft
Screen Length: 15. ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.1516 ft/day
y0 = 0.03095 ft



MW-4 RISING HEAD

Data Set: H:\...\MW-4 Rising Head.aqt
Date: 09/29/16 Time: 11:43:13

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-4
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 10.87 ft Anisotropy Ratio (Kz/Kr): 1.

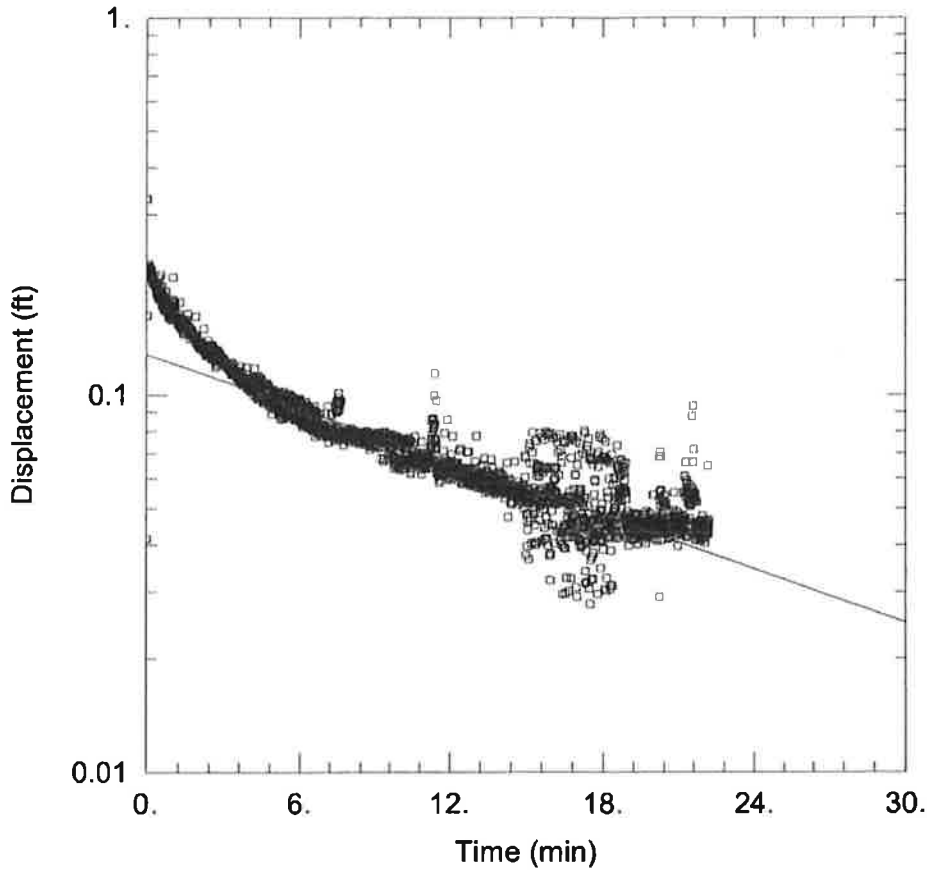
WELL DATA (MW-4)

Initial Displacement: 0.8536 ft
Total Well Penetration Depth: 10.87 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.87 ft
Screen Length: 15. ft
Wellbore Radius: 0.166 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 3.17E-6 ft/min y0 = 0.2755 ft



MW-6 FALLING HEAD

Data Set: H:\...\MW-6 Falling Head.aqt
Date: 09/29/16 Time: 11:43:19

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-6
Test Date: 9/19/2016

AQUIFER DATA

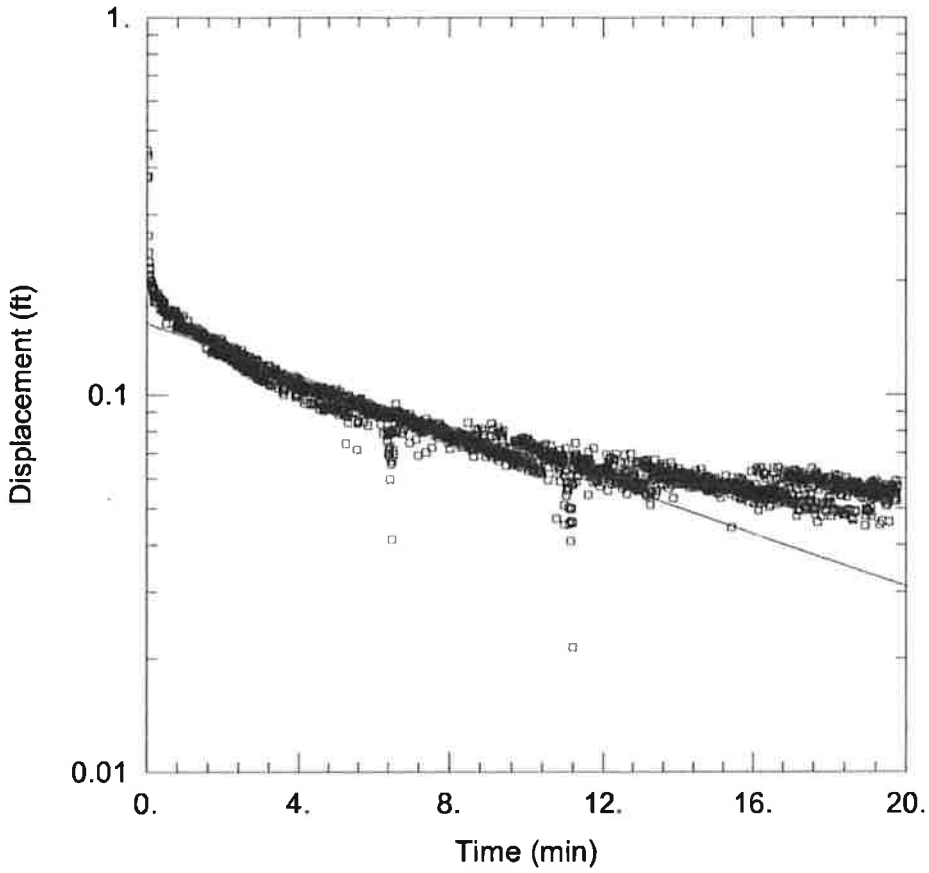
Saturated Thickness: 4.65 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6)

Initial Displacement: 0.3307 ft
Total Well Penetration Depth: 4.65 ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.65 ft
Screen Length: 6.5 ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.09147 ft/day
y0 = 0.1277 ft



MW-6 RISING HEAD

Data Set: H:\...\MW-6 Rising Head.aqt
Date: 09/29/16 Time: 11:43:26

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-6
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 4.72 ft Anisotropy Ratio (Kz/Kr): 1.

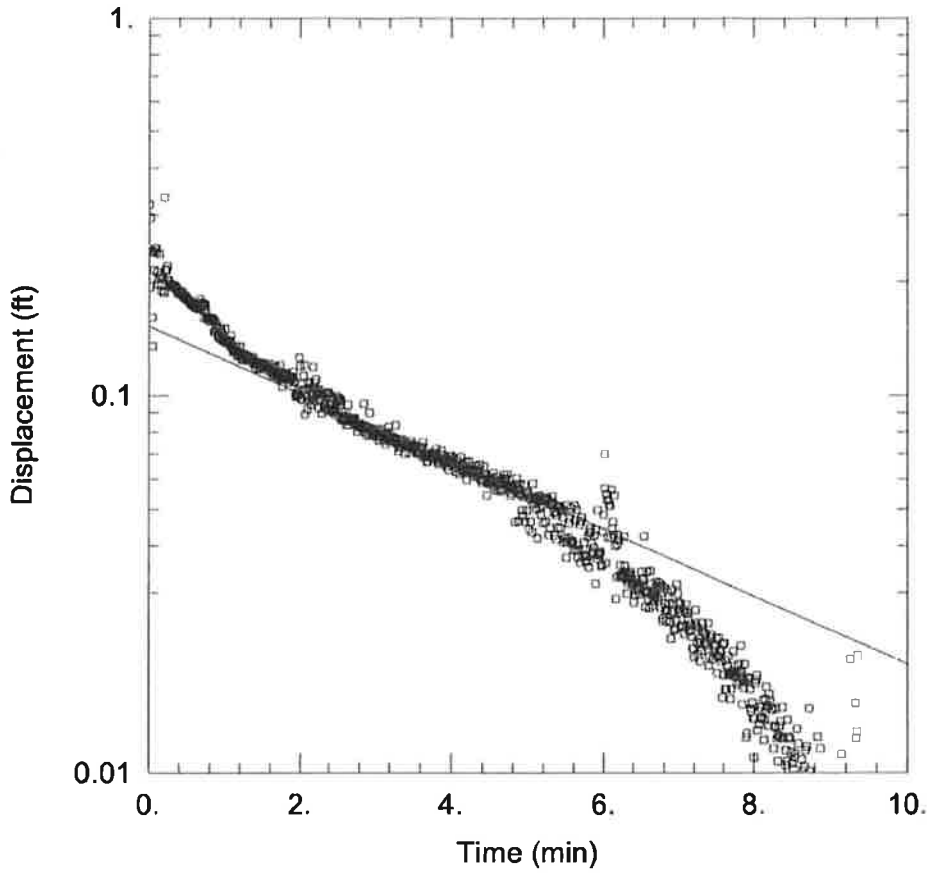
WELL DATA (MW-6)

Initial Displacement: 0.442 ft
Total Well Penetration Depth: 4.72 ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.72 ft
Screen Length: 6.5 ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1352 ft/day y0 = 0.1542 ft



MW-7 FALLING HEAD

Data Set: H:\...\MW-7 Falling Head.aqt
Date: 09/29/16 Time: 11:43:32

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-7
Test Date: 9/19/2016

AQUIFER DATA

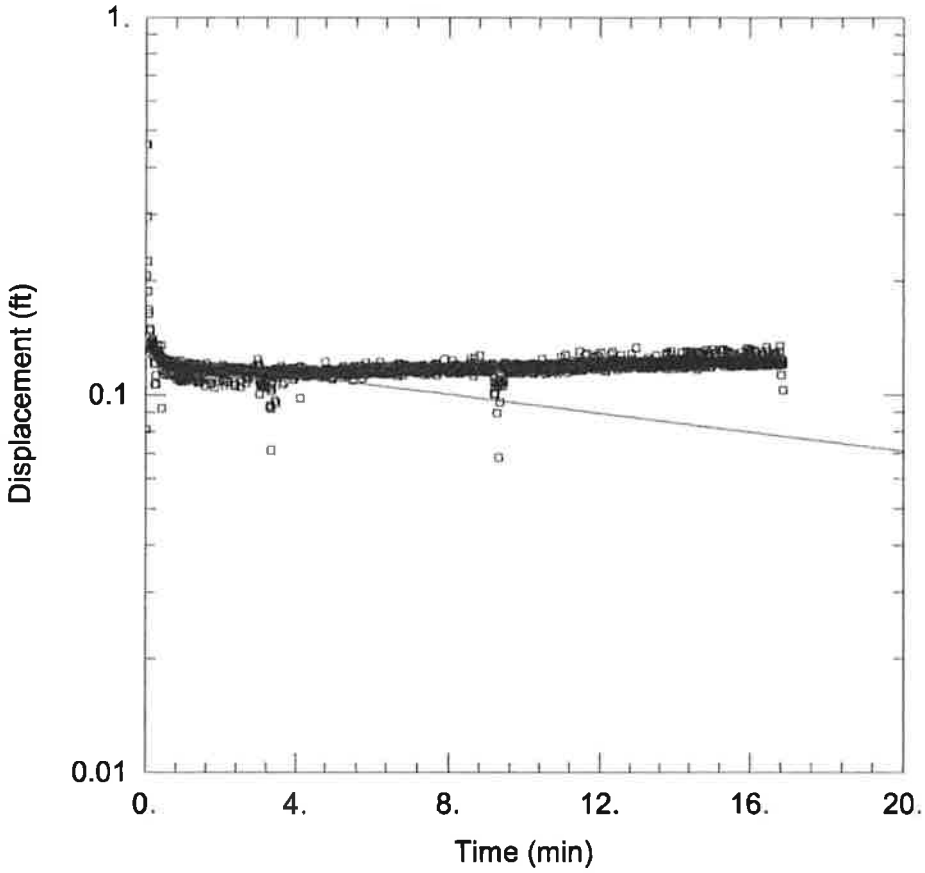
Saturated Thickness: 4.55 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 0.32 ft
Total Well Penetration Depth: 4.55 ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.55 ft
Screen Length: 8.5 ft
Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.2686 ft/day
y0 = 0.1521 ft



MW-7 RISING HEAD

Data Set: H:\...\MW-7 Rising Head.aqt
Date: 09/29/16 Time: 11:43:37

PROJECT INFORMATION

Company: Mountain Research
Client: Vennards
Project: 4644.15.01
Location: Indiana, PA
Test Well: MW-7
Test Date: 9/19/2016

AQUIFER DATA

Saturated Thickness: 4.55 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 0.4598 ft Static Water Column Height: 4.55 ft
Total Well Penetration Depth: 4.55 ft Screen Length: 8.5 ft
Casing Radius: 0.083 ft Wellbore Radius: 0.26 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.03757 ft/day y0 = 0.1262 ft

APPENDIX I

WASTE DISPOSAL CERTIFICATES – SOIL AND GROUNDWATER

ENVIRONMENTAL SPECIALISTS, INC.

"Every Drop Counts"

1000 Andrews Ave.
Youngstown, Ohio 44505
Phone: (330) 746-8174 / Toll Free (888) 331-3443
Fax: (330) 746-8175 www.esrecycling.com

Recycle. Re-Refine. Re-Use. Continuous Use.

Service Document #
174069
CI 8/9/2016

Customer Information	
Name	VENNARD CROSSROADS CONV-J&F HO
Address	4985 LUCERNE ROAD
City/State/Zip	INDIANA / PA / 15701
Phone	216-403-7161
U.S.E.P.A. ID#	CESQG

Billing Information (if different)	
Name	J & F HOLDINGS, INC.
Address	4200 EMERALD BLVD.
City/State/Zip	RICHFIELD / OH / 44286
P.O. Number	
Sales Rep. ID	BB
Pick-up Date	8/10/16

Item #	Description	Term	Unit Price	Qty	Subtotal	Tax	Total
DW028	DRUMMED WATER	On Call	[illegible]	1			0
NH00030	OILY DEBRIS	On Call	[illegible]	7			0

Total Payment Due				
Payment Received Applied To	☐ Cash ☐ Check No.	DO NOT PAY FROM THIS DOCUMENT INVOICE TO FOLLOW	Amount:	0

1. RV (initials) I certify that our used oil has not been mixed with listed hazardous waste as specified in 40 CFR part 261 and that it contains ≤ 1000 ppm total Halogens and no amount of PCBs.
This certification is based on ✓ Generator Knowledge _____ Analysis Generator Status CESQG ☐ SQG ☐ LQG ☐
Note: Used oil containing > 1000 ppm total Halogens must have a successful rebuttal on file and attached to this service document before collecting.

Non Hazardous Waste Information and/or Bill of Lading

Transporter: Environmental Specialists, Inc., OHD000816868, Phone (888) 331-3443
Destination Facility: Environmental Specialists, Inc., 1101 Andrews Avenue, Youngstown, Ohio 44505
OHD000816868, Phone (330) 746-8174, 24 Hour Emergency Response Phone (800) 633-8253.

Bill of Lading and Non Hazardous Waste Information	Containers No.	Containers Type	Total Quantity	Unit Wt./Vol.
Used Naphtha Solvent (High Flash Point, Not EPA or DOT Hazardous)				G
Used Oil (Not EPA or DOT Hazardous)				G
Used Antifreeze (Not EPA or DOT Hazardous)				G
Used Oil Filters (Not EPA or DOT Hazardous)				P
Used Oil and Water (Not EPA or DOT Hazardous)	1	DM	55	G
Used Oil and Debris (Not EPA or DOT Hazardous)	7	DM	385	G
Scrap Tires				P

Charge to my account the amount shown for this transaction unless payment is noted by the payment received. All invoices not paid within 30 days will be subject to an interest rate of 1-1/2% per month. (18% per annum) on unpaid invoices. In the event of default, Environmental Specialist, Inc. Shall be entitled to recover the cost of collection and reasonable attorney's fee. I certify that the materials described in the "Bill of Lading" section and/or the accompanying manifest have been properly classified, packaged and labeled according to all local, State and Federal regulations. I further agree to the terms and conditions on the reverse side.

Richard R. Vennard
Print Name

Richard R. Vennard
Customer Signature

COL01-082103

Water Depot, Inc.

1301 Avondale Rd., New Windsor, MD 21776 • (P) 410-857-9670 • (F) 410-857-2814 • www.oilwaterdisposal.com

NON-HAZARDOUS WASTE MANIFEST/BILL OF LADING TRACKING NUMBER: MR 100516C

Generator Name: VENNDELA'S			Site Name (if different):		
Address: 4985 LUCERNE Rd			Address:		
City: INDIANA	State: PA	Zip:	City:	State:	Zip:
Phone:	Contact:		Phone	Contact:	

Purchase Order No: 22463

Transporter 1 Company Name: [X] **Water Depot, Inc.** [ ] **Subsurface Technologies, Inc.**

Transporter 2 Company Name:

Designated Facility Name: **Water Depot, Inc.**			Other:
Address: **1301 Avondale Rd.**			
City: **New Windsor**	State: **MD**	Zip: **21776**	
Phone: **410-857-9670**			

Shipping Name & Description

Non-hazardous/Non-regulated Material:	Gallons:	Non-hazardous/Non-regulated Material:	Gallons:
Petroleum-Contaminated Water 3) DM's	150	Combustible Liquids, N.O.S., (fuel oil & water for recycling), 3, NA 1993, PGIII	
Petroleum-Contaminated Sludge		Combustible Liquids, N.O.S., (gasoline & water for recycling), 3, NA 1993, PGIII	
Oil for Recycling			
Oil & Water for Recycling		Glycol & Water for Recycling	

	Containers		Quantity	Volume/Units
Other: Non-Hazardous, Non-Regulated Solid	No 05	Type DM	3500	P
Other:	No	Type		

Special handling instructions or additional information

Generator/Shipper Certification Statement

As the generator or shipper, I hereby certify that this material is properly classified and does not contain Polychlorinated Biphenyls (PCBs). To the best of my knowledge it has not been mixed, combined or blended in any amount with any other material defined as hazardous waste under applicable law. Generator/Shipper agrees to indemnify and hold Water Depot, Inc. or Subsurface Technologies, Inc. harmless for any damages arising from or in any way relating to a breach of this Certification Statement.

X Generator Authorized Agent Printed Name Eric Arnt	X Signature	Date 10/5/16
X Transporter 1 Printed Name Eric Arnt	X Signature	Date 10/5/16
X Transporter 2 Printed Name	X Signature	Date / /

Discrepancy Indication Space

Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in discrepancy indication space.

Printed Name Eric Arnt	Acceptance Signature	Date 10/5/16

White-Original Green-Transporter 1 Yellow-Transporter 2 Pink-Facility Gold-Customer

APPENDIX J

HISTORICAL MINING MAP

Vennards Crossroads

Historical Mining map from Pennsylvania Mine Map Atlas PADEP source.

11/6/16

Red Arrow and Dot indicate intersection of Lucerne Rd. and RT 954 (Site)

Upper Freeport Lucerne Ernest E Seam Mine

Sheet RPCC-UMM-400_27395

Sheet RPHB_UMM_100_A14

No additional information listed for this Sheet – Interpreted to be Upper Freeport because of similar room and pillar configurations as previous Sheet.

APPENDIX K

LABORATORY DATA SHEETS – SOIL

MOUNTAIN RESEARCH, LLC

Corporate Office and Laboratory
825 25th Street
Altoona, PA 16601
814.949.2034 Phone
800.837.4674 Toll Free
814.949.9591 Fax
PADEP #07-00418
EPA Lab #PA00165

DuBois Office and Laboratory
110 McCracken Run Road
DuBois, PA 15801
814.371.6030 Phone
814.375.0823 Fax
PADEP #33-00258
EPA Lab #PA00155

08 July 2016

Lab ID #: 1606426

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 06/22/16 18:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

MOUNTAIN RESEARCH, LLC

Corporate Office and Laboratory
825 25th Street
Altoona, PA 16601
814.949.2034 Phone
800.837.4674 Toll Free
814.949.9591 Fax

DuBois Office and Laboratory
110 McCracken Run Road
DuBois, PA 15801
814.371.6030 Phone
814.375.0823 Fax

Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
SB-1 11'	1606426-01	Soil	Grab	06/22/16 08:15	06/22/16 18:20
SB-2 11'	1606426-02	Soil	Grab	06/22/16 08:56	06/22/16 18:20
SB-3 8'	1606426-03	Soil	Grab	06/22/16 12:40	06/22/16 18:20
SB-3 12'	1606426-04	Soil	Grab	06/22/16 12:40	06/22/16 18:20
SB-4 9.5'	1606426-05	Soil	Grab	06/22/16 09:23	06/22/16 18:20
SB-5 13.5'	1606426-06	Soil	Grab	06/22/16 09:50	06/22/16 18:20
SB-6 6'	1606426-07	Soil	Grab	06/22/16 13:06	06/22/16 18:20
SB-6 11'	1606426-08	Soil	Grab	06/22/16 13:06	06/22/16 18:20
SB-7 8'	1606426-09	Soil	Grab	06/22/16 10:39	06/22/16 18:20
SB-7 13'	1606426-10	Soil	Grab	06/22/16 10:27	06/22/16 18:20
SB-8 10'	1606426-11	Soil	Grab	06/22/16 13:50	06/22/16 18:20
SB-8 15'	1606426-12	Soil	Grab	06/22/16 13:50	06/22/16 18:20
SB-9 9.5'	1606426-13	Soil	Grab	06/22/16 11:10	06/22/16 18:20
SB-9 10.5'	1606426-14	Soil	Grab	06/22/16 11:10	06/22/16 18:20
SB-10 15'	1606426-15	Soil	Grab	06/22/16 14:42	06/22/16 18:20
SB-10 18.5'	1606426-16	Soil	Grab	06/22/16 14:42	06/22/16 18:20
SB-10 21.5'	1606426-17	Soil	Grab	06/22/16 14:42	06/22/16 18:20
SB-11 19.0'	1606426-18	Soil	Grab	06/22/16 15:54	06/22/16 18:20
SB-11 21.5'	1606426-19	Soil	Grab	06/22/16 15:54	06/22/16 18:20

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

MOUNTAIN RESEARCH, LLC

Corporate Office and Laboratory
825 25th Street
Altoona, PA 16601
814.949.2034 Phone
800.837.4674 Toll Free
814.949.9591 Fax

DuBois Office and Laboratory
110 McCracken Run Road
DuBois, PA 15801
814.371.6030 Phone
814.375.0823 Fax

Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-1 11'

1606426-01 (Soil) Sampled: 06/22/16 08:15

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**88.5**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<226	226	27.1	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<226	226	23.7	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Benzene	<226	226	29.4	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Ethylbenzene	<226	226	23.7	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<226	226	19.2	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
MTBE	<226	226	28.3	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Naphthalene	<226	226	58.8	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Toluene	<226	226	26.0	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Xylene o	<226	226	37.3	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Xylene p/m	<452	452	59.9	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	
Xylenes, Total	<678	678	NA	NA	µg/Kg dry	06/23/16 20:09	06/23/16 20:09	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*80-120*		*06/23/16 20:09*	*06/23/16 20:09*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/23/16 20:09*	*06/23/16 20:09*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*96.0 %*		*80-120*		*06/23/16 20:09*	*06/23/16 20:09*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*06/23/16 20:09*	*06/23/16 20:09*	*EPA 8260 B*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

MOUNTAIN RESEARCH, LLC

Corporate Office and Laboratory
825 25th Street
Altoona, PA 16601
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DuBois, PA 15801
814.371.6030 Phone
814.375.0823 Fax

Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-2 11'

1606426-02 (Soil) Sampled: 06/22/16 08:56

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**89.6**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<223	223	26.8	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<223	223	23.4	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Benzene	<223	223	29.0	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Ethylbenzene	<223	223	23.4	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<223	223	19.0	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
MTBE	<223	223	27.9	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Naphthalene	<223	223	58.0	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Toluene	<223	223	25.7	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Xylene o	<223	223	36.8	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Xylene p/m	<446	446	59.2	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	
Xylenes, Total	<670	670	NA	NA	µg/Kg dry	06/24/16 01:23	06/24/16 01:23	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*107 %*		*80-120*		*06/24/16 01:23*	*06/24/16 01:23*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*06/24/16 01:23*	*06/24/16 01:23*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.1 %*		*80-120*		*06/24/16 01:23*	*06/24/16 01:23*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 01:23*	*06/24/16 01:23*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-3 8'

1606426-03 (Soil) Sampled: 06/22/16 12:40

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**85.5**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**389**	234	28.1	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<234	234	24.6	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Benzene	**520**	234	30.4	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Ethylbenzene	**541**	234	24.6	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<234	234	19.9	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
MTBE	<234	234	29.2	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Naphthalene	<234	234	60.8	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Toluene	**3210**	234	26.9	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Xylene o	**946**	234	38.6	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Xylene p/m	**2520**	468	62.0	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	
Xylenes, Total	**3460**	702	NA	NA	µg/Kg dry	06/24/16 01:49	06/24/16 01:49	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*101 %*		*80-120*		*06/24/16 01:49*	*06/24/16 01:49*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*06/24/16 01:49*	*06/24/16 01:49*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*100 %*		*80-120*		*06/24/16 01:49*	*06/24/16 01:49*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*06/24/16 01:49*	*06/24/16 01:49*	*EPA 8260 B*			

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Stephen Gampe

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-3 12'

1606426-04 (Soil) Sampled: 06/22/16 12:40

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**84.5**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<237	237	28.4	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<237	237	24.9	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Benzene	**433**	237	30.8	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Ethylbenzene	**575**	237	24.9	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<237	237	20.1	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
MTBE	<237	237	29.6	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Naphthalene	<237	237	61.6	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Toluene	<237	237	27.2	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Xylene o	<237	237	39.1	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Xylene p/m	<473	473	62.7	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	
Xylenes, Total	<710	710	NA	NA	µg/Kg dry	06/24/16 02:15	06/24/16 02:15	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*109 %*		*80-120*		*06/24/16 02:15*	*06/24/16 02:15*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*100 %*		*80-120*		*06/24/16 02:15*	*06/24/16 02:15*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*100 %*		*80-120*		*06/24/16 02:15*	*06/24/16 02:15*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*06/24/16 02:15*	*06/24/16 02:15*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-4 9.5'

1606426-05 (Soil) Sampled: 06/22/16 09:23

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**89.0**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<225	225	27.0	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<225	225	23.6	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Benzene	<225	225	29.2	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Ethylbenzene	<225	225	23.6	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<225	225	19.1	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
MTBE	<225	225	28.1	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Naphthalene	<225	225	58.5	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Toluene	<225	225	25.9	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Xylene o	<225	225	37.1	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Xylene p/m	<450	450	59.6	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	
Xylenes, Total	<675	675	NA	NA	µg/Kg dry	06/24/16 02:41	06/24/16 02:41	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*80-120*		*06/24/16 02:41*	*06/24/16 02:41*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*103 %*		*80-120*		*06/24/16 02:41*	*06/24/16 02:41*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*101 %*		*80-120*		*06/24/16 02:41*	*06/24/16 02:41*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*06/24/16 02:41*	*06/24/16 02:41*	*EPA 8260 B*			

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Stephen Gampe

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-5 13.5'

1606426-06 (Soil) Sampled: 06/22/16 09:50

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**86.0**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<233	233	27.9	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<233	233	24.4	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Benzene	<233	233	30.2	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Ethylbenzene	<233	233	24.4	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<233	233	19.8	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
MTBE	<233	233	29.1	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Naphthalene	<233	233	60.5	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Toluene	<233	233	26.8	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Xylene o	<233	233	38.4	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Xylene p/m	<465	465	61.6	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	
Xylenes, Total	<698	698	NA	NA	µg/Kg dry	06/24/16 03:07	06/24/16 03:07	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*101 %*		*80-120*		*06/24/16 03:07*	*06/24/16 03:07*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*06/24/16 03:07*	*06/24/16 03:07*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.3 %*		*80-120*		*06/24/16 03:07*	*06/24/16 03:07*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 03:07*	*06/24/16 03:07*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-6 6'

1606426-07 (Soil) Sampled: 06/22/16 13:06

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**89.0**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**7960**	225	27.0	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	**2210**	225	23.6	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Benzene	<225	225	29.2	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Ethylbenzene	**3840**	225	23.6	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	**228**	225	19.1	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
MTBE	<225	225	28.1	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Naphthalene	**678**	225	58.5	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Toluene	**480**	225	25.9	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Xylene o	**2500**	225	37.1	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Xylene p/m	**13200**	450	59.6	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	
Xylenes, Total	**15800**	675	NA	NA	µg/Kg dry	06/24/16 03:34	06/24/16 03:34	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*80-120*		*06/24/16 03:34*	*06/24/16 03:34*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/24/16 03:34*	*06/24/16 03:34*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.9 %*		*80-120*		*06/24/16 03:34*	*06/24/16 03:34*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*06/24/16 03:34*	*06/24/16 03:34*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-6 11'

1606426-08 (Soil) Sampled: 06/22/16 13:06

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**88.8**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**13000**	225	27.0	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	**4040**	225	23.6	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Benzene	<225	225	29.3	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Ethylbenzene	**7030**	225	23.6	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	**651**	225	19.1	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
MTBE	<225	225	28.1	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Naphthalene	**1160**	225	58.5	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Toluene	**3400**	225	25.9	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Xylene o	**6060**	225	37.2	NA	µg/Kg dry	06/24/16 04:00	06/24/16 04:00	EPA 8260 B	A	JMG	
Xylene p/m	**28300**	2250	298	NA	µg/Kg dry	06/24/16 04:00	06/25/16 00:39	EPA 8260 B	A	JMG	D1
Xylenes, Total	**34400**	2480	NA	NA	µg/Kg dry	06/24/16 04:00	06/25/16 00:39	EPA 8260 B	A	JMG	CC, D1
Surrogate: 1,2-Dichloroethane-d4		*94.4 %*		*80-120*		*06/24/16 04:00*	*06/24/16 04:00*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*06/24/16 04:00*	*06/24/16 04:00*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*93.6 %*		*80-120*		*06/24/16 04:00*	*06/24/16 04:00*	*EPA 8260 B*			
Surrogate: Toluene-d8		*100 %*		*80-120*		*06/24/16 04:00*	*06/24/16 04:00*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-7 8'

1606426-09 (Soil) Sampled: 06/22/16 10:39

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**89.4**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<224	224	26.8	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<224	224	23.5	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Benzene	<224	224	29.1	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Ethylbenzene	<224	224	23.5	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<224	224	19.0	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
MTBE	<224	224	27.9	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Naphthalene	<224	224	58.1	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Toluene	<224	224	25.7	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Xylene o	<224	224	36.9	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Xylene p/m	<447	447	59.3	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	
Xylenes, Total	<671	671	NA	NA	µg/Kg dry	06/24/16 04:26	06/24/16 04:26	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*104 %*		*80-120*		*06/24/16 04:26*	*06/24/16 04:26*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*103 %*		*80-120*		*06/24/16 04:26*	*06/24/16 04:26*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.2 %*		*80-120*		*06/24/16 04:26*	*06/24/16 04:26*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 04:26*	*06/24/16 04:26*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-7 13'

1606426-10 (Soil) Sampled: 06/22/16 10:27

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**88.2**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**375**	227	27.2	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<227	227	23.8	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Benzene	<227	227	29.5	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Ethylbenzene	**455**	227	23.8	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<227	227	19.3	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
MTBE	<227	227	28.3	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Naphthalene	<227	227	58.9	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Toluene	<227	227	26.1	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Xylene o	**546**	227	37.4	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Xylene p/m	**1570**	453	60.1	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	
Xylenes, Total	**2120**	680	NA	NA	µg/Kg dry	06/24/16 04:52	06/24/16 04:52	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*80-120*		*06/24/16 04:52*	*06/24/16 04:52*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/24/16 04:52*	*06/24/16 04:52*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.5 %*		*80-120*		*06/24/16 04:52*	*06/24/16 04:52*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 04:52*	*06/24/16 04:52*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-8 10'

1606426-11 (Soil) Sampled: 06/22/16 13:50

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**88.2**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**235**	227	27.2	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<227	227	23.8	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Benzene	<227	227	29.5	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Ethylbenzene	**444**	227	23.8	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<227	227	19.3	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
MTBE	<227	227	28.3	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Naphthalene	<227	227	59.0	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Toluene	**2470**	227	26.1	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Xylene o	**638**	227	37.4	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Xylene p/m	**2140**	453	60.1	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	
Xylenes, Total	**2770**	680	NA	NA	µg/Kg dry	06/24/16 05:18	06/24/16 05:18	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*99.5 %*		*80-120*		*06/24/16 05:18*	*06/24/16 05:18*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*06/24/16 05:18*	*06/24/16 05:18*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*99.4 %*		*80-120*		*06/24/16 05:18*	*06/24/16 05:18*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*06/24/16 05:18*	*06/24/16 05:18*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-8 15'

1606426-12 (Soil) Sampled: 06/22/16 13:50

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**87.0**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<230	230	27.6	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<230	230	24.2	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Benzene	<230	230	29.9	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Ethylbenzene	<230	230	24.2	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<230	230	19.6	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
MTBE	<230	230	28.8	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Naphthalene	<230	230	59.8	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Toluene	<230	230	26.5	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Xylene o	<230	230	38.0	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Xylene p/m	<460	460	61.0	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	
Xylenes, Total	<690	690	NA	NA	µg/Kg dry	06/24/16 05:44	06/24/16 05:44	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*80-120*		*06/24/16 05:44*	*06/24/16 05:44*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/24/16 05:44*	*06/24/16 05:44*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*96.9 %*		*80-120*		*06/24/16 05:44*	*06/24/16 05:44*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*06/24/16 05:44*	*06/24/16 05:44*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-9 9.5'

1606426-13 (Soil) Sampled: 06/22/16 11:10

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**87.4**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**15300**	1140	137	NA	µg/Kg dry	06/24/16 06:11	06/25/16 12:01	EPA 8260 B	A	JMG	D1
1,3,5-Trimethylbenzene	**5470**	229	24.0	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Benzene	**1790**	229	29.7	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Ethylbenzene	**391**	229	24.0	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	**904**	229	19.5	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
MTBE	<229	229	28.6	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Naphthalene	**1020**	229	59.5	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Toluene	<229	229	26.3	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Xylene o	<229	229	37.8	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Xylene p/m	**6480**	458	60.6	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	
Xylenes, Total	**6480**	686	NA	NA	µg/Kg dry	06/24/16 06:11	06/24/16 06:11	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*95.6 %*		*80-120*		*06/24/16 06:11*	*06/24/16 06:11*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/24/16 06:11*	*06/24/16 06:11*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*94.0 %*		*80-120*		*06/24/16 06:11*	*06/24/16 06:11*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 06:11*	*06/24/16 06:11*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	Lab ID#: 1606426
5190 White Oak Dr	Project Number: 4644.15.01	Reported: 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-9 10.5'

1606426-14 (Soil) Sampled: 06/22/16 11:10

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**85.4**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	**78300**	2340	281	NA	µg/Kg dry	06/24/16 06:37	06/25/16 12:27	EPA 8260 B	A	JMG	D1
1,3,5-Trimethylbenzene	**24900**	2340	246	NA	µg/Kg dry	06/24/16 06:37	06/25/16 12:27	EPA 8260 B	A	JMG	D1
Benzene	**5650**	234	30.4	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
Ethylbenzene	**4510**	234	24.6	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	**4590**	234	19.9	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
MTBE	<234	234	29.3	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
Naphthalene	**6220**	234	60.9	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
Toluene	**544**	234	26.9	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
Xylene o	**551**	234	38.6	NA	µg/Kg dry	06/24/16 06:37	06/24/16 06:37	EPA 8260 B	A	JMG	
Xylene p/m	**43500**	4680	620	NA	µg/Kg dry	06/24/16 06:37	06/25/16 12:27	EPA 8260 B	A	JMG	D1
Xylenes, Total	**44100**	4920	NA	NA	µg/Kg dry	06/24/16 06:37	06/25/16 12:27	EPA 8260 B	A	JMG	CC, D1
Surrogate: 1,2-Dichloroethane-d4		*92.0 %*		*80-120*		*06/24/16 06:37*	*06/24/16 06:37*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*99.4 %*		*80-120*		*06/24/16 06:37*	*06/24/16 06:37*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*91.0 %*		*80-120*		*06/24/16 06:37*	*06/24/16 06:37*	*EPA 8260 B*			
Surrogate: Toluene-d8		*106 %*		*80-120*		*06/24/16 06:37*	*06/24/16 06:37*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	Lab ID#: 1606426
5190 White Oak Dr	Project Number: 4644.15.01	Reported: 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-10 15'

1606426-15 (Soil) Sampled: 06/22/16 14:42

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**83.2**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<240	240	28.8	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<240	240	25.2	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Benzene	<240	240	31.2	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Ethylbenzene	<240	240	25.2	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<240	240	20.4	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
MTBE	<240	240	30.0	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Naphthalene	<240	240	62.5	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Toluene	<240	240	27.6	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Xylene o	<240	240	39.6	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Xylene p/m	<481	481	63.7	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	
Xylenes, Total	<721	721	NA	NA	µg/Kg dry	06/25/16 10:42	06/25/16 10:42	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*99.6 %*		*80-120*		*06/25/16 10:42*	*06/25/16 10:42*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*104 %*		*80-120*		*06/25/16 10:42*	*06/25/16 10:42*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*99.0 %*		*80-120*		*06/25/16 10:42*	*06/25/16 10:42*	*EPA 8260 B*			
Surrogate: Toluene-d8		*104 %*		*80-120*		*06/25/16 10:42*	*06/25/16 10:42*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	Lab ID#: 1606426
5190 White Oak Dr	Project Number: 4644.15.01	Reported: 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-10 18.5'

1606426-16 (Soil) Sampled: 06/22/16 14:42

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**81.2**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<246	246	29.6	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<246	246	25.9	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Benzene	<246	246	32.0	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Ethylbenzene	<246	246	25.9	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<246	246	20.9	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
MTBE	<246	246	30.8	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Naphthalene	<246	246	64.1	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Toluene	**261**	246	28.3	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Xylene o	<246	246	40.7	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Xylene p/m	<493	493	65.3	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	
Xylenes, Total	<739	739	NA	NA	µg/Kg dry	06/24/16 07:29	06/24/16 07:29	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*97.5 %*		*80-120*		*06/24/16 07:29*	*06/24/16 07:29*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*06/24/16 07:29*	*06/24/16 07:29*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.2 %*		*80-120*		*06/24/16 07:29*	*06/24/16 07:29*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 07:29*	*06/24/16 07:29*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	Lab ID#: 1606426
5190 White Oak Dr	Project Number: 4644.15.01	Reported: 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-10 21.5'

1606426-17 (Soil) Sampled: 06/22/16 14:42

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**89.1**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<224	224	26.9	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<224	224	23.6	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Benzene	<224	224	29.2	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Ethylbenzene	<224	224	23.6	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<224	224	19.1	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
MTBE	<224	224	28.0	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Naphthalene	<224	224	58.3	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Toluene	<224	224	25.8	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Xylene o	<224	224	37.0	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Xylene p/m	<449	449	59.5	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	
Xylenes, Total	<673	673	NA	NA	µg/Kg dry	06/24/16 07:55	06/24/16 07:55	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*104 %*		*80-120*		*06/24/16 07:55*	*06/24/16 07:55*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*103 %*		*80-120*		*06/24/16 07:55*	*06/24/16 07:55*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*94.4 %*		*80-120*		*06/24/16 07:55*	*06/24/16 07:55*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*06/24/16 07:55*	*06/24/16 07:55*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/08/16 11:40

SB-11 19.0'

1606426-18 (Soil) Sampled: 06/22/16 15:54

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**85.3**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<235	235	28.1	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<235	235	24.6	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Benzene	<235	235	30.5	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Ethylbenzene	<235	235	24.6	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<235	235	19.9	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
MTBE	<235	235	29.3	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Naphthalene	<235	235	61.0	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Toluene	<235	235	27.0	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Xylene o	<235	235	38.7	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Xylene p/m	<469	469	62.2	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	
Xylenes, Total	<704	704	NA	NA	µg/Kg dry	06/24/16 08:22	06/24/16 08:22	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*106 %*		*80-120*		*06/24/16 08:22*	*06/24/16 08:22*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/24/16 08:22*	*06/24/16 08:22*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*94.3 %*		*80-120*		*06/24/16 08:22*	*06/24/16 08:22*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 08:22*	*06/24/16 08:22*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606426
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/08/16 11:40
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-11 21.5'

1606426-19 (Soil) Sampled: 06/22/16 15:54

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**90.9**	1.00	0.0500	NA	wt%	07/06/16 18:20	07/06/16 18:20	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<220	220	26.4	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<220	220	23.1	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Benzene	<220	220	28.6	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Ethylbenzene	<220	220	23.1	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<220	220	18.7	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
MTBE	<220	220	27.5	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Naphthalene	<220	220	57.2	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Toluene	<220	220	25.3	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Xylene o	<220	220	36.3	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Xylene p/m	<440	440	58.3	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	
Xylenes, Total	<660	660	NA	NA	µg/Kg dry	06/24/16 08:48	06/24/16 08:48	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*80-120*		*06/24/16 08:48*	*06/24/16 08:48*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*102 %*		*80-120*		*06/24/16 08:48*	*06/24/16 08:48*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.9 %*		*80-120*		*06/24/16 08:48*	*06/24/16 08:48*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*06/24/16 08:48*	*06/24/16 08:48*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc 5190 White Oak Dr Indiana PA, 15701	Project Name: Indiana, PA Project Number: 4644.15.01 Lab Project Manager: Stephen Gampe	**Lab ID#:** 1606426 **Reported:** 07/08/16 11:40

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	06/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

O1	The VOC vial contained an amount of soil outside the EPA recommendation.
D1	The sample was analyzed at a dilution.
CC	Calculated analytes are reported based on unrounded results of the individual analytes used in the calculation. Therefore, using the rounded values of the analytes as reported may lead to a result that varies slightly from the reported result.
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

Drilling

PROJECT NAME: Vennard's

MR Project #: 4644.15.01

SITE LOCATION: Indiana, PA

CLIENT: Vennard's

SAMPLER(S): BA

NOTES:

Received On Ice: (Y) / N

Sample Temp: 5.8

PWSID #:

Comments:

MOUNTAIN RESEARCH

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110 McCracken Run Road, Dubois, PA 15801 (814) 375-0823

CHAIN OF CUSTODY RECORD

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

Analyses Requested: 8260B; % Solid

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	% Solid	Preserve	LAB NUMBER
SB-1 11.0 ft BA	6/22/16	0815	X		Soil	1 40 mL VOA	2A 4A	X		MEOH	01
↓		↓				1 4 oz Jar			X	None	↓
SB-2 11.0 ft		0856				1 40 mL VOA		X		MEOH	02
↓		↓				1 4 oz Jar			X	None	↓
SB-3 8.0 ft		1240				1 40 mL VOA		X		MEOH	03
↓		↓				1 4 oz Jar			X	None	↓
SB-3 12.0 ft						1 40 mL VOA		X		MEOH	04
↓		↓				1 4 oz Jar			X	None	↓
SB-4 9.5 ft		0923				1 40 mL VOA		X		MEOH	05
↓		↓				1 4 oz Jar			X	None	↓
SB-5 13.5 ft		0958				1 40 mL VOA		X		MEOH	06
↓	↓	↓	↓		↓	1 4 oz Jar	↓		X	None	↓

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME
Brian Ar	6/22/16	1820	Christina Omar	06/22/16 1820
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME

Lab Workorder #: 1608426

Labeled By:

Log In Time: 1350

Staff: CL

1/4

Spring | Vennard's

MR Project # 4644.15.01

SITE LOCATION Indiana, PA

CLIENT Vennard's

SAMPLER(S) BA

NOTES:

Received On Ice (Y) / N

Sample Temp: 5.8

PWSID #:

Comments:

MOUNTAIN RESEARCH LLC

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(814) 371-6030 Fax (814) 375-0823

CHAIN OF CUSTODY RECORD

Analyses Requested

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	% Solid	Preserve	LAB NUMBER
SB-6 6.0ft	6/22/16	1306	X		Soil	1 40mL VOA	2A 4A	X		MEOH	07
↓						1 4oz Jar			X	None	↓
SB-6 11.0ft						1 40mL VOA		X		MEOH	08
↓		↓				1 4oz Jar			X	None	↓
SB-7 8.0ft		1039				1 40mL VOA		X		MEOH	09
↓		↓				1 4oz Jar			X	None	↓
SB-7 13.0ft		1027				1 40mL VOA		X		MEOH	10
↓		↓				1 4oz Jar			X	None	↓
SB-8 10.0ft		1350				1 40mL VOA		X		MEOH	11
↓		↓				1 4oz Jar			X	None	↓
SB-8 15.0ft		1350				1 40mL VOA		X		MEOH	12
↓		↓				1 4oz Jar			X	None	↓

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME
[signature]	6/22/16	1820	[signature]	6/22/16 1820
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME

Lab Workorder #: 1606.424

Labeled By:

Log In Time: 1350

Staff: KD

2/4

Drilling | Vennard's

MR Project # 4644.15.01

SITE LOCATION Indiana, PA

CLIENT Vennard's

SAMPLER(S) BA

NOTES:

Received On Ice: (Y) / N

Sample Temp: 5.8

PWSID #:

Comments:

MOUNTAIN RESEARCH LLC

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(814) 371-6030 Fax (814) 375-0823

CHAIN OF CUSTODY RECORD

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

Analyses Requested

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	826013	% Solid	Preserve	LAB NUMBER
SB-9 9.5 ft	6/22/16	1110	X		Soil	1 40mL VOA	2A 4A	X		MEOH	13
						1 4 oz Jar			X	None	
SB-9 10.5 ft						1 40mL VOA		X		MEOH	14
						1 4 oz Jar			X	None	
SB-10 15.0 ft		1442				1 40mL VOA		X		MEOH	15
						1 4 oz Jar			X	None	
SB-10 18.5 ft						1 40mL VOA		X		MEOH	16
						1 4 oz Jar			X	None	
SB-10 21.5 ft						1 40mL VOA		X		MEOH	17
						1 4 oz Jar			X	None	
SB-11 19.0 ft		1554				1 40 mL VOA		X		MEOH	18
						1 4 oz Jar			X	None	

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME
Brian Ac	6/22/16	1820	Christine Johnson	6/22/16 1820
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME

Lab Workorder #: 1606426

Labeled By:

Log In Time: 1350

Staff: KJ

6/22/16

3/

Drilling

PROJECT NAME: Vennards

MR Project #: 4644.15.01

SITE LOCATION: Indiana, PA

CLIENT: Vennards

SAMPLER(S): BA

NOTES:

Received On Ice: (Y) / N

Sample Temp: 5.8

PWSID #:

Comments:

MOUNTAIN RESEARCH LLC

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CHAIN OF CUSTODY RECORD

MR PROJ. MGR.: MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

Analyses Requested

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	% Solid	Preserve	LAB NUMBER
SB-11 21.5ft	6/22/16	1554	X		Soil	140 mL VOA	2A 4A	X		MEOH	19
↓	↓	↓	↓		↓	1 4oz Jar	↓		X	None	↓

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME	Lab Workorder #:
Brian Acr	6/22/16	1820	Christina L Shman	6/22/16 1820	1606426
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME	Labeled By:

Log In Time: 1350

Staff: KL

Date: 6/23/16

41..

WORK ORDER: 1606426

CLIENT: Vennard's

DATE SAMPLED: 6/22/16 DATE RECEIVED: 6/22/16 TIME RECEIVED: 1820

MOUNTAIN RESEARCH, LLC

1. CHECK ALL THAT APPLY: PA ☒ WV ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☒

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 38

4. WERE THE SAMPLES RECEIVED ON ICE? YES ☒ NO ☐

IF NO, EXPLAIN: _____

5. RECEIVING TEMPERATURE: 5.8 °C BOTTLE(S) TEMPED: SB-11

6. WERE THE SAMPLES PROPERLY PRESERVED? YES ☒ NO ☐

IF NO, EXPLAIN: _____

7. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☒ NO ☐

IF NO, EXPLAIN: _____

8. WAS THE COC FILLED OUT PROPERLY? YES ☒ NO ☐

IF NO, EXPLAIN: _____

9. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☒ NO ☐

IF NO, EXPLAIN: _____

10. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☒

IF YES, EXPLAIN: _____

11. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☒

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

12. IS SUBCONTRACTING REQUIRED? YES ☐ NO ☒

IF YES, WHAT ANALYSES? _____

13. WAS THE CLIENT CONTACTED? YES ☐ NO ☒

IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: CLIENT SPOKEN TO: DATE/TIME:

OUTCOME:

SIGNATURE: Christina Schmaus

L60.30 A r0 Sample Receipt Form

For MR Use Only

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PADEP #33-00258
EPA Lab #PA00155

21 September 2016

Lab ID #: 1609161

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 09/08/16 15:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
SB-12 8.5'	1609161-01	Solid	Grab	09/07/16 09:57	09/08/16 15:10
SB-13 10'	1609161-02	Solid	Grab	09/07/16 12:15	09/08/16 15:10
SB-14 6'	1609161-03	Solid	Grab	09/08/16 08:37	09/08/16 15:10
SB-14 7'	1609161-04	Solid	Grab	09/08/16 08:37	09/08/16 15:10
SB-14 11'	1609161-05	Solid	Grab	09/08/16 08:37	09/08/16 15:10
SB-14 13'	1609161-06	Solid	Grab	09/08/16 08:37	09/08/16 15:10
SB-15 12.5'	1609161-07	Solid	Grab	09/07/16 09:06	09/08/16 15:10
SB-16 14.0'	1609161-08	Solid	Grab	09/07/16 08:46	09/08/16 15:10
SB-17 13'	1609161-09	Solid	Grab	09/07/16 08:18	09/08/16 15:10

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-12 8.5'

1609161-01 (Solid) Sampled: 09/07/16 09:57

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**87.9**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<228	228	27.3	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<228	228	23.9	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Benzene	<228	228	29.6	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Ethylbenzene	<228	228	23.9	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<228	228	19.3	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
MTBE	<228	228	28.4	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Naphthalene	<228	228	59.2	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Toluene	<228	228	26.2	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Xylene o	<228	228	37.6	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Xylene p/m	<455	455	60.3	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	
Xylenes, Total	<683	683	97.9	NA	µg/Kg dry	09/09/16 16:09	09/09/16 16:09	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*104 %*		*80-120*		*09/09/16 16:09*	*09/09/16 16:09*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*96.9 %*		*80-120*		*09/09/16 16:09*	*09/09/16 16:09*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.7 %*		*80-120*		*09/09/16 16:09*	*09/09/16 16:09*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*09/09/16 16:09*	*09/09/16 16:09*	*EPA 8260 B*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-13 10'

1609161-02 (Solid) Sampled: 09/07/16 12:15

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**85.4**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<234	234	28.1	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<234	234	24.6	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Benzene	<234	234	30.4	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Ethylbenzene	<234	234	24.6	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<234	234	19.9	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
MTBE	<234	234	29.3	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Naphthalene	<234	234	60.9	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Toluene	<234	234	26.9	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Xylene o	<234	234	38.6	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Xylene p/m	<468	468	62.1	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	
Xylenes, Total	<703	703	101	NA	µg/Kg dry	09/09/16 16:35	09/09/16 16:35	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*98.2 %*		*80-120*		*09/09/16 16:35*	*09/09/16 16:35*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*98.1 %*		*80-120*		*09/09/16 16:35*	*09/09/16 16:35*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.6 %*		*80-120*		*09/09/16 16:35*	*09/09/16 16:35*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*09/09/16 16:35*	*09/09/16 16:35*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-14 6'

1609161-03 (Solid) Sampled: 09/08/16 08:37

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**87.5**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	D2
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<229	229	27.4	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<229	229	24.0	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Benzene	<229	229	29.7	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Ethylbenzene	<229	229	24.0	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<229	229	19.4	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
MTBE	<229	229	28.6	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Naphthalene	<229	229	59.4	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Toluene	<229	229	26.3	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Xylene o	<229	229	37.7	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Xylene p/m	<457	457	60.6	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	
Xylenes, Total	<686	686	98.3	NA	µg/Kg dry	09/09/16 17:01	09/09/16 17:01	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*101 %*		*80-120*		*09/09/16 17:01*	*09/09/16 17:01*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*97.9 %*		*80-120*		*09/09/16 17:01*	*09/09/16 17:01*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*99.3 %*		*80-120*		*09/09/16 17:01*	*09/09/16 17:01*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*09/09/16 17:01*	*09/09/16 17:01*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-14 7'

1609161-04 (Solid) Sampled: 09/08/16 08:37

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**88.6**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<226	226	27.1	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<226	226	23.7	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Benzene	<226	226	29.4	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Ethylbenzene	<226	226	23.7	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<226	226	19.2	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
MTBE	<226	226	28.2	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Naphthalene	<226	226	58.7	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Toluene	<226	226	26.0	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Xylene o	<226	226	37.3	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Xylene p/m	<452	452	59.8	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	
Xylenes, Total	<677	677	97.1	NA	µg/Kg dry	09/09/16 17:28	09/09/16 17:28	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*99.5 %*		*80-120*		*09/09/16 17:28*	*09/09/16 17:28*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*97.4 %*		*80-120*		*09/09/16 17:28*	*09/09/16 17:28*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*96.9 %*		*80-120*		*09/09/16 17:28*	*09/09/16 17:28*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*09/09/16 17:28*	*09/09/16 17:28*	*EPA 8260 B*			

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-14 11'

1609161-05 (Solid) Sampled: 09/08/16 08:37

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**86.7**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<231	231	27.7	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<231	231	24.2	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Benzene	<231	231	30.0	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Ethylbenzene	<231	231	24.2	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<231	231	19.6	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
MTBE	<231	231	28.8	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Naphthalene	<231	231	60.0	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Toluene	<231	231	26.5	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Xylene o	<231	231	38.1	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Xylene p/m	<461	461	61.1	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	
Xylenes, Total	<692	692	99.2	NA	µg/Kg dry	09/09/16 17:54	09/09/16 17:54	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*107 %*		*80-120*		*09/09/16 17:54*	*09/09/16 17:54*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*98.1 %*		*80-120*		*09/09/16 17:54*	*09/09/16 17:54*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*97.7 %*		*80-120*		*09/09/16 17:54*	*09/09/16 17:54*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*09/09/16 17:54*	*09/09/16 17:54*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-14 13'

1609161-06 (Solid) Sampled: 09/08/16 08:37

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**74.5**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<268	268	32.2	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<268	268	28.2	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Benzene	<268	268	34.9	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Ethylbenzene	<268	268	28.2	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<268	268	22.8	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
MTBE	<268	268	33.5	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Naphthalene	<268	268	69.8	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Toluene	<268	268	30.9	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Xylene o	<268	268	44.3	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Xylene p/m	<537	537	71.1	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	
Xylenes, Total	<805	805	115	NA	µg/Kg dry	09/09/16 18:20	09/09/16 18:20	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*97.9 %*		*80-120*		*09/09/16 18:20*	*09/09/16 18:20*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*96.1 %*		*80-120*		*09/09/16 18:20*	*09/09/16 18:20*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.2 %*		*80-120*		*09/09/16 18:20*	*09/09/16 18:20*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*09/09/16 18:20*	*09/09/16 18:20*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-15 12.5'

1609161-07 (Solid) Sampled: 09/07/16 09:00

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**85.7**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<233	233	28.0	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<233	233	24.5	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Benzene	<233	233	30.3	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Ethylbenzene	<233	233	24.5	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<233	233	19.8	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
MTBE	<233	233	29.2	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Naphthalene	<233	233	60.7	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Toluene	<233	233	26.8	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Xylene o	<233	233	38.5	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Xylene p/m	<467	467	61.8	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	
Xylenes, Total	<700	700	100	NA	µg/Kg dry	09/09/16 18:46	09/09/16 18:46	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*		*80-120*		*09/09/16 18:46*	*09/09/16 18:46*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*97.1 %*		*80-120*		*09/09/16 18:46*	*09/09/16 18:46*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*93.6 %*		*80-120*		*09/09/16 18:46*	*09/09/16 18:46*	*EPA 8260 B*			
Surrogate: Toluene-d8		*101 %*		*80-120*		*09/09/16 18:46*	*09/09/16 18:46*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	09/21/16 14:44

SB-16 14.0'

1609161-08 (Solid) Sampled: 09/07/16 08:46

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**84.2**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<238	238	28.5	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<238	238	25.0	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Benzene	<238	238	30.9	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Ethylbenzene	<238	238	25.0	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<238	238	20.2	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
MTBE	<238	238	29.7	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Naphthalene	<238	238	61.8	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Toluene	<238	238	27.3	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Xylene o	<238	238	39.2	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Xylene p/m	<475	475	63.0	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	
Xylenes, Total	<713	713	102	NA	µg/Kg dry	09/09/16 19:12	09/09/16 19:12	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*100 %*		*80-120*		*09/09/16 19:12*	*09/09/16 19:12*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*96.2 %*		*80-120*		*09/09/16 19:12*	*09/09/16 19:12*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.1 %*		*80-120*		*09/09/16 19:12*	*09/09/16 19:12*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*09/09/16 19:12*	*09/09/16 19:12*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609161
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 09/21/16 14:44
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

SB-17 13'

1609161-09 (Solid) Sampled: 09/07/16 08:18

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Total Solids	**84.1**	1.00	0.0500	NA	wt%	09/14/16 17:00	09/14/16 17:00	SM 2540 G-97	A	CML	
Volatile Organic Compounds by GC/MS											**O1**
1,2,4-Trimethylbenzene	<238	238	28.5	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<238	238	25.0	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Benzene	<238	238	30.9	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Ethylbenzene	<238	238	25.0	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<238	238	20.2	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
MTBE	<238	238	29.7	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Naphthalene	<238	238	61.8	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Toluene	<238	238	27.3	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Xylene o	<238	238	39.2	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Xylene p/m	<476	476	63.0	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	
Xylenes, Total	<713	713	102	NA	µg/Kg dry	09/09/16 19:38	09/09/16 19:38	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*80-120*		*09/09/16 19:38*	*09/09/16 19:38*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*97.7 %*		*80-120*		*09/09/16 19:38*	*09/09/16 19:38*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*97.8 %*		*80-120*		*09/09/16 19:38*	*09/09/16 19:38*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*09/09/16 19:38*	*09/09/16 19:38*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc 5190 White Oak Dr Indiana PA, 15701	Project Name: Indiana, PA Project Number: 4644.15.01 Lab Project Manager: Stephen Gampe	**Lab ID#:** 1609161 **Reported:** 09/21/16 14:44

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	09/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

O1	The VOC vial contained an amount of soil outside the EPA recommendation.
D2	The Relative Percent Difference between 1609161-03 and its duplicate did not meet laboratory acceptance criteria.
CC	Calculated analytes are reported based on unrounded results of the individual analytes used in the calculation. Therefore, using the rounded values of the analytes as reported may lead to a result that varies slightly from the reported result.
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

BALL POINT PEN ONLY

Billing Group:	Phase: Drilling	PROJECT NAME: Vennards
MR Project #: 4644.15.01		SITE LOCATION: Indiana, PA
CLIENT: Vennard's		SAMPLER(S): BA

NOTES:
Received On Ice: Y / N
Sample Temp: 5.4 °C
PWSID #:
Seal In Tack: Y / N
Other:
Comments:

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CHAIN OF CUSTODY RECORD

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID.NO.	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	% Solid						Preserve	LAB NUMBER
SB-12 8.5'	9/7/2016	0957	X		Soil	1 40ml Voa	2A, 4A	X							MEOH	01
SB-12 8.5'	9/7/2016	0957	X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	1
SB-13 10'	9/7/2016	1215	X		Soil	1 40ml Voa	2A, 4A	X							MEOH	02
SB-13 10'	9/7/2016	1215	X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	1
SB-14 6'	9/8/2016	0837	X		Soil	1 40ml Voa	2A, 4A	X							MEOH	03
SB-14 6'	9/8/2016		X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	1
SB-14 7'	9/8/2016		X		Soil	1 40ml Voa	2A, 4A	X							MEOH	04
SB-14 7'	9/8/2016		X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	1
SB-14 13'	9/8/2016		X		Soil	1 40ml Voa	2A, 4A	X							MEOH	05
SB-14 13'	9/8/2016		X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	1
SB-14 13'	9/8/2016		X		Soil	1 40ml Voa	2A, 4A	X							MEOH	06
SB-14 13'	9/8/2016		X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	1

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Lab WO #:
[signature]	9/8/16	1510	[signature]	9/8/15	15:10	1609161
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Labeled By:

Log In Time: 1614
Staff: [illegible]
Date: 9/8/16

White - Lab; Blue - File; Yellow - Project Manager; Pink - Staff

1/2

C:\Users\bazar\Desktop\COC

BALL POINT PEN ONLY

00001

Billing Group:	Phase:	PROJECT NAME
	Drilling	Vennards
MR Project #		SITE LOCATION
4644.15.01		Indiana, PA
CLIENT		SAMPLER(S)
Vennard's		BA

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CHAIN OF CUSTODY RECORD

NOTES:

Received On Ice: Y / N

Sample Temp: 5.4

PWSID #:

Seal In Pack: Y / N

Other:

Comments:

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID.NO.	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	% Solid						Preserve	LAB NUMBER
SB-15 12.5'	9/7/2016	0906	X		Soil	1 40ml Voa	2A, 4A	X							MEOH	07
SB-15 12.5'	9/7/2016	0906	X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	
SB-16 14.0'	9/7/2016	0846	X		Soil	1 40ml Voa	2A, 4A	X							MEOH	08
SB-16 14.0	9/7/2016	0846	X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	
SB-17 13'	9/7/2016	0818	X		Soil	1 40ml Voa	2A, 4A	X							MEOH	09
SB-17 13'	9/7/2016	0818	X		Soil	1 4 Oz Jar	2A, 4A		X						NONE	

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Lab WO #:
[illegible]	9/8/16	1510	[illegible]	9/8/16	1510	1409161
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Labeled By:

Log In Time: 1614

Staff: RC

Date: 9/8/16

2/2

White - Lab; Blue - File; Yellow - Project Manager; Pink - Staff

C:\Users\bazar\Desktop\COC

DATE SAMPLED: 9/7/16 DATE RECEIVED: 9/8/16 TIME RECEIVED: 0710

1. CHECK ALL THAT APPLY: PA ☑ WV ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☑

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 18

4. IS THERE HEADSPACE PRESENT FOR VOLATILES/ODOR SAMPLES? YES ☐ NO N/A

5. WERE THE SAMPLES RECEIVED ON ICE? YES ☑ NO ☐

IF NO, EXPLAIN: _____

6. RECEIVING TEMPERATURE: 5.4 °C BOTTLE(S) TEMPED: _____

7. WERE THE SAMPLES PROPERLY PRESERVED? YES ☑ NO ☐

IF NO, EXPLAIN: _____

8. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☑ NO ☐

IF NO, EXPLAIN: _____

9. WAS THE COC FILLED OUT PROPERLY? YES ☑ NO ☐

IF NO, EXPLAIN: _____

10. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☑ NO ☐

IF NO, EXPLAIN: _____

11. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☑

IF YES, EXPLAIN: _____

12. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☑

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

13. IS SUBCONTRACTING REQUIRED? YES ☐ NO ☑

IF YES, WHAT ANALYSES? _____

14. WAS THE CLIENT CONTACTED? YES ☐ NO ☑ IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: _____ CLIENT SPOKEN TO: _____ DATE/TIME: _____

OUTCOME: _____

SIGNATURE: _____

L60.30 A r1 Sample Receipt Form

For MR Use Only

APPENDIX L

LABORATORY DATA SHEETS – GEOTECHNICAL

SPECIFIC GRAVITY OF SOILS - ASTM D854 (B)

Client Mountain Research, LLC
Client Project 22013
Project No. 37530

Lab Sample No.	Boring	Depth	Sample	Replicate No.	Material Used	Passing #4 Sieve	Pycnometer Id.	Pre-test Pycnometer Check Weight	Weight Pycnometer +Soil+Water	Test Temp.	Tare No.	Weight Tare+ Dry Soil	Tare Weight	Weight Dry Soil	Test Water Density	Weight Pycnometer +Water at Test Temp	Average Calibrated Pycnometer Dry Weight	Average Calibrated Volume of Pycnometer	Specific Gravity of Soil at Test Temp	Conversion Factor For Temp	Specific Gravity of Soil at 20*C
								gm	gm	°C		gm	gm	gm	gm/ml	gm	gm	ml	g/cc		g/cc
					Sieve	%		Mp	Mpws,t	Tt				Mds	ρw,t	Mpw,t	Mp	Vp	Gt	Tb-K	G20*C
				TEST PARAMETERS													CALIBRATION PARAMETERS		SPECIFIC GRAVITY		
37530001	NA	6/24/2016	NA	1	-#4	NA	W	193.17	722.51	22.5	1001	241.98	191.99	49.99	0.9977	691.32	193.13	499.36	2.658	0.9994	2.66
37530001	NA	6/24/2016	NA	2	-#4	NA	D	163.45	693.86	22.5	1003	242.52	190.93	51.59	0.9977	661.99	163.41	499.75	2.616	0.9994	2.61
																				Average=	2.64

Input Validation: tmp

Reviewed By: SVG

Date: 6/29/2016

PARTICLE-SIZE ANALYSIS OF SOILS - ASTM D422

Client	Mountain Research, LLC	Boring	NA
Client Project	22013	Depth	6-24-16
Project No.	37530	Sample	NA
		Lab Sample	37530001

Sample Color: **YELLOWISH BROWN**
USCS Group Name: **CLAYEY SAND**
USCS Group Symbol: **SC** USDA: **NA** AASHTO: **A-4 (0)**

MECHANICAL SIEVE

Total Sample	
Total Sample Wet Wt, gm (-3")	781
Sample Split on Sieve	No. 4
Coarse Washed Dry Sample, gm	48
Wet Wt Passing Split, gm	733
Dry Wt. Passing Split, gm	655
Total Sample Dry Wt, gm	703

Split Sample - Passing No. 4	
Tare No.	2070
Tare + WS., gm	400.53
Tare + DS., gm	374.19
Tare, gm	153.05
Water Content of Split Sample	**11.9%**
Wt. of DS., gm	221.14
Wt. of +#200 Sample, gm	119.04

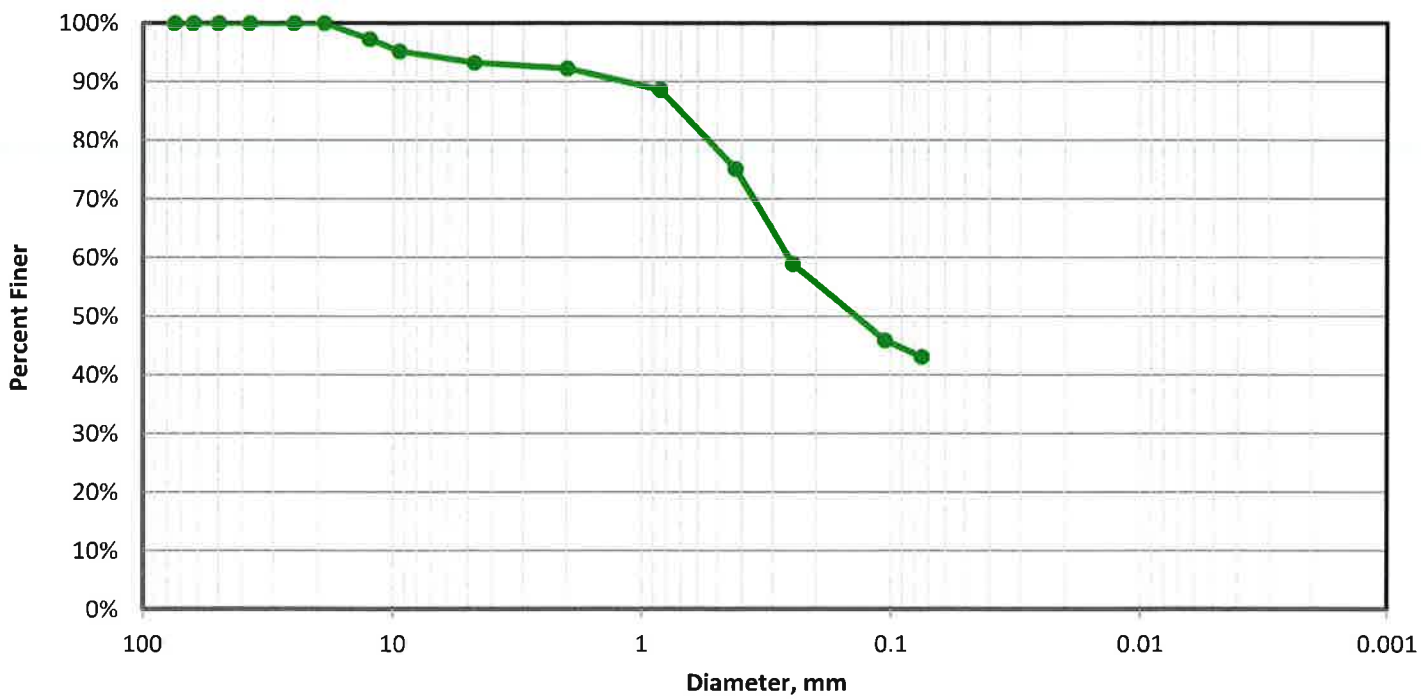
Sieve Size	Nominal Opening, mm	Dry Wt, gm	Split Normalized % Retained	Split Normalized % Finer	Project Specifications
3"	75	0	0.0%	100.0%	
2-1/2"	63	0	0.0%	100.0%	
2"	50	0	0.0%	100.0%	
1-1/2"	37.5	0	0.0%	100.0%	
1"	25	0	0.0%	100.0%	
3/4"	19	0	0.0%	100.0%	
1/2"	12.5	19.44	2.8%	97.2%	
3/8"	9.5	14.61	2.1%	95.2%	
No. 4	4.75	13.63	1.9%	93.2%	
No. 10	2	2.29	1.0%	92.2%	
No. 20	0.85	8.59	3.6%	88.6%	
No. 40	0.425	32.02	13.5%	75.1%	
No. 60	0.25	38.4	16.2%	58.9%	
No. 140	0.106	31.04	13.1%	45.9%	
No. 200	0.075	6.7	2.8%	43.0%	

USCS SOIL CLASSIFICATION

Corrected For 100% Passing a 3" Sieve

% Gravel (-3" & +#4)	**6.8**	Silt=NA Clay=NA	
Coarse=0; Fine=6.8		D60, mm	NA
% Sand (-#4 & +#200)	**50.2**	D30, mm	NA
Coarse=1; Medium=17.1; Fine=32.1		D10, mm	NA
% Fines (-#200)	**43.0**	Cc	NA
% Plus #200 (-3")	**57.0**	Cu	NA

USCS Description			
CLAYEY SAND			
USCS Group Symbol	**Atterberg Limits Group Symbol**		
SC	CL - LEAN CLAY		
Auxiliary Information	Wt Ret, gm	% Retained	% Finer
12" Sieve - 300 mm	0	0.0	100.0
6" Sieve - 150 mm	0	0.0	100.0
3" Sieve - 75 mm	0	0.0	100.0



Input Validation tmp Reviewed By: SVG Date Tested 6/29/2019

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS
ASTM D 4318

Client	Mountain Research, LLC	Boring	NA
Client Project	22013	Depth	6-24-16
Project No.	37530	Sample	NA
		Lab Sample	37530001

Soil Description: YELLOWISH BROWN LEAN CLAY
(-#40 Fraction)

AS-RECEIVED W.C.

Tare Number	2070
Wt. Tare & WS, gm	400.53
Wt. Tare & DS, gm	374.19
Wt. Tare, gm	153.05
Water Content, %	11.9

SAMPLE SUMMARY

Liquidity Index = -.39	
Liquid Limit (LL), %	**23**
Plastic Limit (PL), %	**15**
Plasticity Index (PI)	**8**
USCS Group Symbol (*-#40 Fraction*)	**CL**
USCS Group Name (*-#40 Fraction*)	**LEAN CLAY**
Sample Color:	**YELLOWISH BROWN**

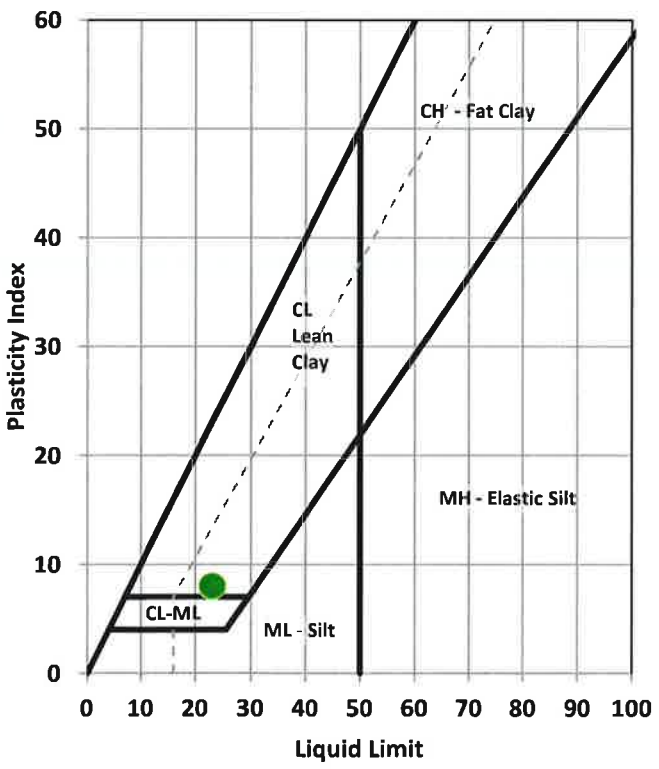
PLASTIC LIMIT

Points Run	3 Points		
Tare Number	243	218	265
Wt. Tare & WS, gm	22.59	22.34	22.92
Wt. Tare & DS, gm	21.77	21.53	22.05
Wt. Tare, gm	16.12	16.13	16.22
Water Content, %	14.5	15.0	14.9

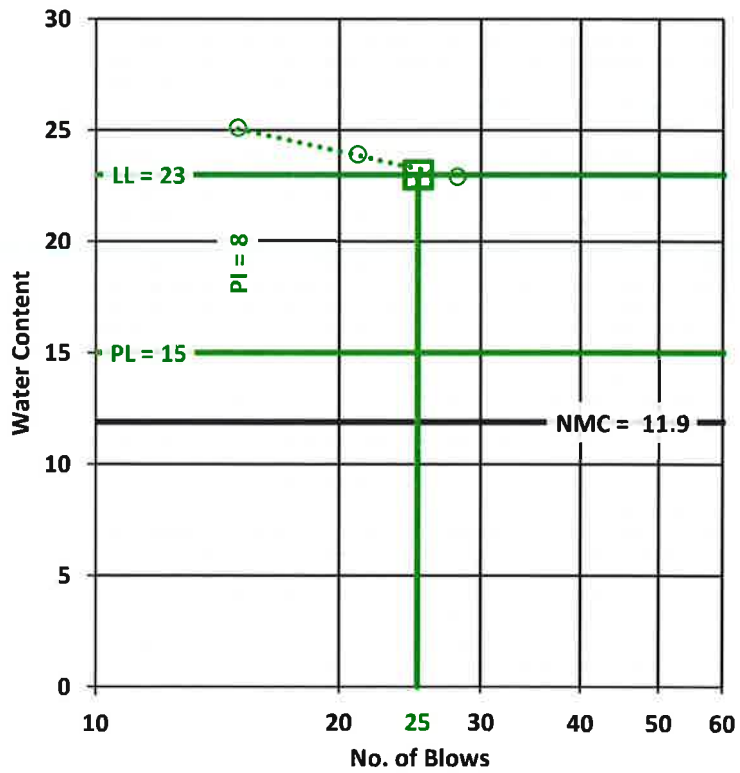
LIQUID LIMIT

	3 Points		
	221	208	225
	23.94	24.94	24.57
	22.40	23.28	23.03
	16.27	16.34	16.31
	25.1	23.9	22.9
# of Blows	15	21	28

PLASTICITY CHART



FLOW CURVE



Input Validation: Yes Reviewed By: SVG Date Tested: 6/29/2019

DENSITY DETERMINATIONS

Client	Mountain Research, LLC
Project	22013
Project No.	37530

Boring Number	NA									
Depth	6/24/2016									
Sample	NA									
Lab Sample No.	37530001									
Water Contents										
Tare Number	2070									
Wt. Tare & WS, gm	400.53									
Wt. Tare & DS, gm	374.19									
Wt. Tare, gm	153.05									
Water Content, %	**11.9%**									
Direct Measurement Method										
Wt. Of Wet Soil + tube., gm	679.35									
Wt of empty tube, gm	46.58									
Wt. of Wet Soil, gm	632.77									
Length 1, in	9.859									
Length 2, in	9.557									
Length 3, in	10.119									
Top Diameter, in	1.669									
Middle Diameter, in	1.675									
Bottom Diameter, in	1.661									
Sample Volume, cc	352.67									
Water Content ,%	11.9%									
Unit Wet Wt., gm/cc	1.79									
Unit Wet Wt., pcf	112.0									
Unit Dry Wt., pcf	**100.0**									
Unit Dry Wt., gm/cc	1.60									
Specific Gravity, Tested	2.64									
Void Ratio,e	0.65									
Porosity, n	0.39									
Saturation, %	48.6%									

Input Validation: tmp Reviewed By: SVG Date: 6/29/2016

MOUNTAIN RESEARCH, LLC

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PADEP #33-00258
EPA Lab #PA00155

13 July 2016

Lab ID #: 1606427

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 06/22/16 18:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606427
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/13/16 10:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
FOC	1606427-01	Soil	Grab	06/22/16 08:15	06/22/16 18:20

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606427
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 07/13/16 10:17
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

FOC

1606427-01 (Soil) Sampled: 06/22/16 08:15

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
General Chemistry by Standard/EPA/ASTM Methods											
Organic Matter	**2.42**	0.100	NA	NA	%	07/05/16 15:00	07/05/16 15:00	ASTM D2974-00C	A	CML	D2

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1606427
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	07/13/16 10:17

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	06/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

D2	The Relative Percent Difference between 1606427-01 and its duplicate did not meet laboratory acceptance criteria.
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

Drilling | Vennards

MR Project # 4644.15.01

SITE LOCATION Indiana, PA

CLIENT Vennards

SAMPLER(S) BA

NOTES:

Received On Ice: Y / N

Sample Temp: 5.8

PWSID #:

Comments:

MOUNTAIN RESEARCH

825 25th Street, Altoona, PA 16601

110 McCracken Run Road, Dubois, PA 15801

7-4674 FAX (814) 949-9591

4) 375-0823

CHAIN OF CUSTODY RE

Analyses Requested

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	FOC	Preserve	LAB NUMBER
FOC	6/22/16	0815	X		Soil	1 8 oz Jar		X	None	01

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME	Lab Workorder #:
Brian Ar	6/22/16	1820	Christina Johnson	6/22/16 1820	1606427
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME	Labeled By:

Log In Time: 1424

Staff: KC

Date: 6/23/16

Page 5 of 6

WORK ORDER: 1606427

CLIENT: Vennards

DATE SAMPLED: 6/22/16 DATE RECEIVED: 6/22/16 TIME RECEIVED: 1820

MOUNTAIN RESEARCH, LLC

1. CHECK ALL THAT APPLY: PA ☒ WV ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☒

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 1

4. WERE THE SAMPLES RECEIVED ON ICE? YES ☒ NO ☐

IF NO, EXPLAIN: _____

5. RECEIVING TEMPERATURE: 5.8 °C BOTTLE(S) TEMPED: FOC

6. WERE THE SAMPLES PROPERLY PRESERVED? YES ☒ NO ☒ CML 6/22/16

IF NO, EXPLAIN: _____

7. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☒ NO ☐

IF NO, EXPLAIN: _____

8. WAS THE COC FILLED OUT PROPERLY? YES ☒ NO ☐

IF NO, EXPLAIN: _____

9. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☒ NO ☐

IF NO, EXPLAIN: _____

10. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☒

IF YES, EXPLAIN: _____

11. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☒

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

12. IS SUBCONTRACTING REQUIRED? YES ☐ NO ☒

IF YES, WHAT ANALYSES? _____

13. WAS THE CLIENT CONTACTED? YES ☐ NO ☒

IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: CLIENT SPOKEN TO: DATE/TIME:

OUTCOME:

SIGNATURE: Christina Johnson

L60.30 A r0 Sample Receipt Form

For MR Use Only

APPENDIX M

LABORATORY DATA SHEETS – GROUNDWATER

MOUNTAIN RESEARCH, LLC

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PADEP #33-00258
EPA Lab #PA00155

29 August 2016

Lab ID #: 1608400

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 08/18/16 13:41. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 08/29/16 10:25
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
Trip Blank	1608400-01	Aqueous	Grab	08/17/16 22:00	08/18/16 13:41
MW-1	1608400-02	Aqueous	Grab	08/18/16 10:30	08/18/16 13:41
MW-2	1608400-03	Aqueous	Grab	08/18/16 10:20	08/18/16 13:41
MW-3	1608400-04	Aqueous	Grab	08/18/16 09:23	08/18/16 13:41
MW-4	1608400-05	Aqueous	Grab	08/18/16 10:37	08/18/16 13:41
Stream Point	1608400-06	Aqueous	Grab	08/18/16 09:33	08/18/16 13:41

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/29/16 10:25

Trip Blank

1608400-01 (Aqueous) Sampled: 08/17/16 22:00

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	0.123	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	C, L
Toluene	<2.00	2.00	0.230	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/18/16 23:43	08/18/16 23:43	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*100 %*		*80-120*		*08/18/16 23:43*	*08/18/16 23:43*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*08/18/16 23:43*	*08/18/16 23:43*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*99.2 %*		*80-120*		*08/18/16 23:43*	*08/18/16 23:43*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*08/18/16 23:43*	*08/18/16 23:43*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/29/16 10:25

MW-1

1608400-02 (Aqueous) Sampled: 08/18/16 10:30

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	Na
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	Na
Benzene	<2.00	2.00	0.260	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	0.123	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	C, L, N
Toluene	<2.00	2.00	0.230	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/18/16 16:43	08/18/16 16:43	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*80-120*		*08/18/16 16:43*	*08/18/16 16:43*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*101 %*		*80-120*		*08/18/16 16:43*	*08/18/16 16:43*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*95.2 %*		*80-120*		*08/18/16 16:43*	*08/18/16 16:43*	*EPA 8260 B*			
Surrogate: Toluene-d8		*102 %*		*80-120*		*08/18/16 16:43*	*08/18/16 16:43*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 08/29/16 10:25
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

MW-2

1608400-03 (Aqueous) Sampled: 08/18/16 10:20

Mountain Research, LLC

Volatile Organic Compounds by GC/MS

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Benzene	**2.86**	2.00	0.260	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
MTBE	**11.3**	2.00	0.123	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	C, L
Toluene	<2.00	2.00	0.230	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/19/16 00:09	08/19/16 00:09	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*99.1 %*		*80-120*		*08/19/16 00:09*	*08/19/16 00:09*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*100 %*		*80-120*		*08/19/16 00:09*	*08/19/16 00:09*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*101 %*		*80-120*		*08/19/16 00:09*	*08/19/16 00:09*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*08/19/16 00:09*	*08/19/16 00:09*	*EPA 8260 B*			

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/29/16 10:25

MW-3

1608400-04 (Aqueous) Sampled: 08/18/16 09:23

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
MTBE	**6.35**	2.00	0.123	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	Na
Toluene	<2.00	2.00	0.230	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/19/16 15:47	08/19/16 15:47	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*		*80-120*		*08/19/16 15:47*	*08/19/16 15:47*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*99.8 %*		*80-120*		*08/19/16 15:47*	*08/19/16 15:47*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.0 %*		*80-120*		*08/19/16 15:47*	*08/19/16 15:47*	*EPA 8260 B*			
Surrogate: Toluene-d8		*104 %*		*80-120*		*08/19/16 15:47*	*08/19/16 15:47*	*EPA 8260 B*			

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/29/16 10:25

MW-4

1608400-05 (Aqueous) Sampled: 08/18/16 10:37

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Benzene	**18.2**	2.00	0.260	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
MTBE	**18.0**	2.00	0.123	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	0.230	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/20/16 04:00	08/20/16 04:00	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*98.5 %*		*80-120*		*08/20/16 04:00*	*08/20/16 04:00*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*99.2 %*		*80-120*		*08/20/16 04:00*	*08/20/16 04:00*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*101 %*		*80-120*		*08/20/16 04:00*	*08/20/16 04:00*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*08/20/16 04:00*	*08/20/16 04:00*	*EPA 8260 B*			

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/29/16 10:25

Stream Point

1608400-06 (Aqueous) Sampled: 08/18/16 09:33

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	0.123	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	0.230	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/20/16 04:27	08/20/16 04:27	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*97.1 %*		*80-120*		*08/20/16 04:27*	*08/20/16 04:27*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*96.6 %*		*80-120*		*08/20/16 04:27*	*08/20/16 04:27*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*103 %*		*80-120*		*08/20/16 04:27*	*08/20/16 04:27*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*08/20/16 04:27*	*08/20/16 04:27*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1608400
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/29/16 10:25

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	09/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

Na	Matrix spike recovery was outside of the laboratory acceptance criteria.
N	Matrix spike and matrix duplicate spike recovery was outside of the laboratory acceptance criteria.
L	The laboratory control spike did not meet laboratory acceptance criteria.
CC	Calculated analytes are reported based on unrounded results of the individual analytes used in the calculation. Therefore, using the rounded values of the analytes as reported may lead to a result that varies slightly from the reported result.
C	The associated analytical results may be biased high.
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

GW Sampling

PROJECT NAME: Grand water Sampling

MR Project #: 4644.15.01

SITE LOCATION: Indiana PA

CLIENT: Vernards

SAMPLER(S): CML BA

NOTES:

Received On Ice: (Y) / N

Sample Temp: 5.8

PWSID #:

Comments:

MOUNTAIN RESEARCH LL

825 25th Street, Altoona, PA 16601 (814) 94

110 McCracken Run Road, Dubois, PA 15801 (814) 37

CHAIN OF CUSTODY RECORD

Analyses Requested: 8260B

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	Preserve	LAB NUMBER
Trip Blank	8/17/16	2200	X		AQ	2 40ml vials	2A	X	HCl	01
MW-1	8/18/16	1030								02
MW-2		1020								03
MW-3		0923								04
MW-4		1037								05
Stream point		0933								06

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME
[signature]	8/18/16	1341	[signature]	8/18/16 1341
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME

Lab Workorder #: 1608400

Labeled By:

Log In Time: 1652

Staff: CML

MOUNTAIN RESEARCH SAMPLE RECEIPT PROTOCOL

WORK ORDER: 1608400

CLIENT: Vennards

DATE SAMPLED: 8/18/16 DATE RECEIVED: 8/18/16 TIME RECEIVED: 1341

1. CHECK ALL THAT APPLY: PA ☒ WV ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☒

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 12

4. IS THERE HEADSPACE PRESENT FOR VOLATILES/ODOR SAMPLES? YES ☐ NO X

5. WERE THE SAMPLES RECEIVED ON ICE? YES ☒ NO ☐

IF NO, EXPLAIN: _____

6. RECEIVING TEMPERATURE: 5.8 °C BOTTLE(S) TEMPED: MW4

7. WERE THE SAMPLES PROPERLY PRESERVED? YES ☒ NO ☐

IF NO, EXPLAIN: _____

8. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☒ NO ☐

IF NO, EXPLAIN: _____

9. WAS THE COC FILLED OUT PROPERLY? YES ☒ NO ☐

IF NO, EXPLAIN: _____

10. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☒ NO ☐

IF NO, EXPLAIN: _____

11. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☒

IF YES, EXPLAIN: _____

12. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☒

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

13. IS SUBCONTRACTING REQUIRED? YES ☐ NO X

IF YES, WHAT ANALYSES? _____

14. WAS THE CLIENT CONTACTED? YES ☐ NO ☒ IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: CLIENT SPOKEN TO: DATE/TIME:

OUTCOME:

SIGNATURE: Christina Lehman

L60.30 A r1 Sample Receipt Form

For MR Use Only

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EPA Lab #PA00155

04 August 2016

Lab ID #: 1607505

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 07/27/16 13:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/04/16 16:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
Trip Blank	1607505-01	Aqueous	Grab	07/26/16 14:50	07/27/16 13:30
Stream	1607505-02	Aqueous	Grab	07/27/16 11:10	07/27/16 13:30
MW-1	1607505-03	Aqueous	Grab	07/27/16 10:46	07/27/16 13:30
MW-2	1607505-04	Aqueous	Grab	07/27/16 11:15	07/27/16 13:30
MW-3	1607505-05	Aqueous	Grab	07/27/16 09:55	07/27/16 13:30
MW-4	1607505-06	Aqueous	Grab	07/27/16 11:21	07/27/16 13:30

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/04/16 16:53

Trip Blank

1607505-01 (Aqueous) Sampled: 07/26/16 14:50

Mountain Research, LLC

Volatile Organic Compounds by GC/MS

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
MTBE	<2.00	2.00	0.123	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Toluene	<2.00	2.00	0.230	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/02/16 02:17	08/02/16 02:17	EPA 8260 B	A	MTG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*80-120*		*08/02/16 02:17*	*08/02/16 02:17*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*92.8 %*		*80-120*		*08/02/16 02:17*	*08/02/16 02:17*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*108 %*		*80-120*		*08/02/16 02:17*	*08/02/16 02:17*	*EPA 8260 B*			
Surrogate: Toluene-d8		*104 %*		*80-120*		*08/02/16 02:17*	*08/02/16 02:17*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/04/16 16:53

Stream

1607505-02 (Aqueous) Sampled: 07/27/16 11:10

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Benzene	<2.00	2.00	0.260	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
MTBE	<2.00	2.00	0.123	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Toluene	<2.00	2.00	0.230	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	07/29/16 20:38	07/29/16 20:38	EPA 8260 B	A	MTG	CC
Surrogate: 1,2-Dichloroethane-d4		*100 %*		*80-120*		*07/29/16 20:38*	*07/29/16 20:38*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*94.2 %*		*80-120*		*07/29/16 20:38*	*07/29/16 20:38*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*98.7 %*		*80-120*		*07/29/16 20:38*	*07/29/16 20:38*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*07/29/16 20:38*	*07/29/16 20:38*	*EPA 8260 B*			

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/04/16 16:53

MW-1

1607505-03 (Aqueous) Sampled: 07/27/16 10:46

Mountain Research, LLC

Volatile Organic Compounds by GC/MS

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
MTBE	<2.00	2.00	0.123	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Toluene	<2.00	2.00	0.230	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/02/16 02:43	08/02/16 02:43	EPA 8260 B	A	MTG	CC
Surrogate: 1,2-Dichloroethane-d4		*104 %*		*80-120*		*08/02/16 02:43*	*08/02/16 02:43*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*91.4 %*		*80-120*		*08/02/16 02:43*	*08/02/16 02:43*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*108 %*		*80-120*		*08/02/16 02:43*	*08/02/16 02:43*	*EPA 8260 B*			
Surrogate: Toluene-d8		*104 %*		*80-120*		*08/02/16 02:43*	*08/02/16 02:43*	*EPA 8260 B*			

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	Lab ID#: 1607505
5190 White Oak Dr	Project Number: 4644.15.01	Reported: 08/04/16 16:53
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

MW-2

1607505-04 (Aqueous) Sampled: 07/27/16 11:15

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
MTBE	**9.77**	2.00	0.123	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Toluene	<2.00	2.00	0.230	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/02/16 03:09	08/02/16 03:09	EPA 8260 B	A	MTG	CC
Surrogate: 1,2-Dichloroethane-d4		*102 %*		*80-120*		*08/02/16 03:09*	*08/02/16 03:09*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*93.2 %*		*80-120*		*08/02/16 03:09*	*08/02/16 03:09*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*104 %*		*80-120*		*08/02/16 03:09*	*08/02/16 03:09*	*EPA 8260 B*			
Surrogate: Toluene-d8		*104 %*		*80-120*		*08/02/16 03:09*	*08/02/16 03:09*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 08/04/16 16:53
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

MW-3

1607505-05 (Aqueous) Sampled: 07/27/16 09:55

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Benzene	<2.00	2.00	0.260	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Ethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
MTBE	**4.76**	2.00	0.123	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Toluene	<2.00	2.00	0.230	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Xylene o	<2.00	2.00	0.330	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Xylene p/m	<4.00	4.00	0.530	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	
Xylenes, Total	<6.00	6.00	NA	NA	µg/L	08/02/16 03:35	08/02/16 03:35	EPA 8260 B	A	MTG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*80-120*		*08/02/16 03:35*	*08/02/16 03:35*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*93.2 %*		*80-120*		*08/02/16 03:35*	*08/02/16 03:35*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*102 %*		*80-120*		*08/02/16 03:35*	*08/02/16 03:35*	*EPA 8260 B*			
Surrogate: Toluene-d8		*103 %*		*80-120*		*08/02/16 03:35*	*08/02/16 03:35*	*EPA 8260 B*			

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/04/16 16:53

MW-4

1607505-06 (Aqueous) Sampled: 07/27/16 11:21

Analyte	Result	PQL	MDL	Regulatory Limit	Units	Prepared	Analyzed	Method	Lab	Analyst	Notes
Mountain Research, LLC											
Volatile Organic Compounds by GC/MS											
1,2,4-Trimethylbenzene	<2.00	2.00	0.240	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
1,3,5-Trimethylbenzene	<2.00	2.00	0.210	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Benzene	**28.7**	2.00	0.260	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Ethylbenzene	**5.20**	2.00	0.210	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Isopropylbenzene (Cumene)	<2.00	2.00	0.170	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
MTBE	**22.2**	2.00	0.123	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Naphthalene	<2.00	2.00	2.00	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Toluene	**17.7**	2.00	0.230	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Xylene o	**8.48**	2.00	0.330	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Xylene p/m	**12.7**	4.00	0.530	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	
Xylenes, Total	**21.1**	6.00	NA	NA	µg/L	08/02/16 04:01	08/02/16 04:01	EPA 8260 B	A	MTG	CC
Surrogate: 1,2-Dichloroethane-d4		*99.4 %*		*80-120*		*08/02/16 04:01*	*08/02/16 04:01*	*EPA 8260 B*			
Surrogate: 4-Bromofluorobenzene		*94.9 %*		*80-120*		*08/02/16 04:01*	*08/02/16 04:01*	*EPA 8260 B*			
Surrogate: Dibromofluoromethane		*102 %*		*80-120*		*08/02/16 04:01*	*08/02/16 04:01*	*EPA 8260 B*			
Surrogate: Toluene-d8		*105 %*		*80-120*		*08/02/16 04:01*	*08/02/16 04:01*	*EPA 8260 B*			

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1607505
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	08/04/16 16:53

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	09/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

CC	Calculated analytes are reported based on unrounded results of the individual analytes used in the calculation. Therefore, using the rounded values of the analytes as reported may lead to a result that varies slightly from the reported result.
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

BALL POINT PEN ONLY

Billing Group:	Phase:	PROJECT NAME
	GW-Sampling	Vennard's
MR Project #		SITE LOCATION
4644.15.01		Indiana, PA

CLIENT: Vennard's

SAMPLER(S): BA

NOTES:
Received On Ice: Y / N
Sample Temp: 4.0°C
PWSID #:
Seal In Tack: Y / N
Other:
Comments:

MOUNTAIN RESEARCH LLC
825 25th Street, Altoona, PA 16601 (814) 949-2034 (800) 83
110 McCracken Run Road, Dubois, PA 15801 (814) 371-6030 Fax (81

CHAIN OF CUSTODY RECORD

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID.NO.	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B							Preserve	LAB NUMBER
TRIP BLANK	7/26/2016	1450	X		AQ	2 40mL VOA	2A	X							HCl	01
Stream	7/27/2016	1110	X		AQ	2 40mL VOA	2A	X							HCl	02
MW-1	7/27/2016	1046	X		AQ	2 40mL VOA	2A	X							HCl	03
MW-2	7/27/2016	1115	X		AQ	2 40mL VOA	2A	X							HCl	04
MW-3	7/27/2016	955	X		AQ	2 40mL VOA	2A	X							HCl	05
MW-4	7/27/2016	1121	X		AQ	2 40mL VOA	2A	X							HCl	06

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Lab WO #:
[signature]	7/27/16	1330	[signature]	7/27/16	13:30	1607505
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Labeled By:

Log In Time: 13:51
Staff: KD
Date: 7/26/16
7/27/16

White - Lab; Blue - File; Yellow - Project Manager; Pink - Staff

C:\Users\bazar\Desktop\COC

WORK ORDER: 1607505

CLIENT: Kennards

DATE SAMPLED: 7/27/16 DATE RECEIVED: 7/27/16 TIME RECEIVED: 13:30

MOUNTAIN RESEARCH, LLC

1. CHECK ALL THAT APPLY: PA ☑ WV ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☑

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 12

4. WERE THE SAMPLES RECEIVED ON ICE? YES ☑ NO ☐

IF NO, EXPLAIN: _____

5. RECEIVING TEMPERATURE: 4.0 °C BOTTLE(S) TEMPED: _____

6. WERE THE SAMPLES PROPERLY PRESERVED? YES ☑ NO ☐

IF NO, EXPLAIN: _____

7. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☑ NO ☐

IF NO, EXPLAIN: _____

8. WAS THE COC FILLED OUT PROPERLY? YES ☑ NO ☐

IF NO, EXPLAIN: _____

9. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☑ NO ☐

IF NO, EXPLAIN: _____

10. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☑

IF YES, EXPLAIN: _____

11. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☑

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

12. IS SUBCONTRACTING REQUIRED? YES ☐ NO ☑

IF YES, WHAT ANALYSES? _____

13. WAS THE CLIENT CONTACTED? YES ☐ NO ☑

IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: CLIENT SPOKEN TO: DATE/TIME:

OUTCOME:

SIGNATURE: _____

L60.30 A r0 Sample Receipt Form

For MR Use Only

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EPA Lab #PA00155

18 October 2016

Lab ID #: 1610058

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 10/04/16 15:01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
Trip Blank	1610058-01	Aqueous	Grab	10/04/16 07:12	10/04/16 15:01
MW-1	1610058-02	Aqueous	Grab	10/04/16 12:22	10/04/16 15:01
MW-2	1610058-03	Aqueous	Grab	10/04/16 12:38	10/04/16 15:01
MW-3	1610058-04	Aqueous	Grab	10/04/16 12:13	10/04/16 15:01
MW-4	1610058-05	Aqueous	Grab	10/04/16 12:48	10/04/16 15:01
MW-5	1610058-06	Aqueous	Grab	10/04/16 12:08	10/04/16 15:01
MW-6	1610058-07	Aqueous	Grab	10/04/16 09:58	10/04/16 15:01
MW-7	1610058-08	Aqueous	Grab	10/04/16 10:23	10/04/16 15:01
MW-8	1610058-09	Aqueous	Grab	10/04/16 12:04	10/04/16 15:01
Stream	1610058-10	Aqueous	Grab	10/04/16 13:00	10/04/16 15:01
Duplicate	1610058-11	Aqueous	Grab	10/04/16 12:48	10/04/16 15:01

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

Trip Blank

1610058-01 (Aqueous) Sampled: 10/04/16 07:12

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 01:41	10/06/16 01:41	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*80-120*	*10/06/16 01:41*	*10/06/16 01:41*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*94.4 %*	*80-120*	*10/06/16 01:41*	*10/06/16 01:41*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*109 %*	*80-120*	*10/06/16 01:41*	*10/06/16 01:41*	*EPA 8260 B*				
Surrogate: Toluene-d8		*103 %*	*80-120*	*10/06/16 01:41*	*10/06/16 01:41*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-1

1610058-02 (Aqueous) Sampled: 10/04/16 12:22

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**2.40**	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 02:07	10/06/16 02:07	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*80-120*	*10/06/16 02:07*	*10/06/16 02:07*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*94.8 %*	*80-120*	*10/06/16 02:07*	*10/06/16 02:07*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*111 %*	*80-120*	*10/06/16 02:07*	*10/06/16 02:07*	*EPA 8260 B*				
Surrogate: Toluene-d8		*103 %*	*80-120*	*10/06/16 02:07*	*10/06/16 02:07*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-2

1610058-03 (Aqueous) Sampled: 10/04/16 12:38

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	**14.5**	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	**4.84**	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**9.73**	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	**4.00**	2.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 02:33	10/06/16 02:33	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*80-120*	*10/06/16 02:33*	*10/06/16 02:33*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*96.4 %*	*80-120*	*10/06/16 02:33*	*10/06/16 02:33*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*104 %*	*80-120*	*10/06/16 02:33*	*10/06/16 02:33*	*EPA 8260 B*				
Surrogate: Toluene-d8		*104 %*	*80-120*	*10/06/16 02:33*	*10/06/16 02:33*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-3

1610058-04 (Aqueous) Sampled: 10/04/16 12:13

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**5.92**	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 02:59	10/06/16 02:59	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*100 %*	*80-120*	*10/06/16 02:59*	*10/06/16 02:59*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*94.5 %*	*80-120*	*10/06/16 02:59*	*10/06/16 02:59*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*105 %*	*80-120*	*10/06/16 02:59*	*10/06/16 02:59*	*EPA 8260 B*				
Surrogate: Toluene-d8		*104 %*	*80-120*	*10/06/16 02:59*	*10/06/16 02:59*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-4

1610058-05 (Aqueous) Sampled: 10/04/16 12:48

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	**57.0**	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	**5.19**	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**18.9**	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	**7.42**	4.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	**7.42**	6.00	µg/L	10/06/16 03:25	10/06/16 03:25	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*80-120*	*10/06/16 03:25*	*10/06/16 03:25*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*93.8 %*	*80-120*	*10/06/16 03:25*	*10/06/16 03:25*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*113 %*	*80-120*	*10/06/16 03:25*	*10/06/16 03:25*	*EPA 8260 B*				
Surrogate: Toluene-d8		*102 %*	*80-120*	*10/06/16 03:25*	*10/06/16 03:25*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-5

1610058-06 (Aqueous) Sampled: 10/04/16 12:08

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 03:51	10/06/16 03:51	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*80-120*	*10/06/16 03:51*	*10/06/16 03:51*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*95.2 %*	*80-120*	*10/06/16 03:51*	*10/06/16 03:51*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*109 %*	*80-120*	*10/06/16 03:51*	*10/06/16 03:51*	*EPA 8260 B*				
Surrogate: Toluene-d8		*103 %*	*80-120*	*10/06/16 03:51*	*10/06/16 03:51*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 10/18/16 16:51
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

MW-6

1610058-07 (Aqueous) Sampled: 10/04/16 09:58

Mountain Research, LLC

Volatile Organic Compounds by GC/MS

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	**3.44**	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 04:17	10/06/16 04:17	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*105 %*	*80-120*	*10/06/16 04:17*	*10/06/16 04:17*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*94.1 %*	*80-120*	*10/06/16 04:17*	*10/06/16 04:17*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*111 %*	*80-120*	*10/06/16 04:17*	*10/06/16 04:17*	*EPA 8260 B*				
Surrogate: Toluene-d8		*104 %*	*80-120*	*10/06/16 04:17*	*10/06/16 04:17*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-7

1610058-08 (Aqueous) Sampled: 10/04/16 10:23

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	**18.9**	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	**11.1**	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**2.67**	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	**13.5**	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	**7.34**	2.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	**7.34**	6.00	µg/L	10/06/16 04:43	10/06/16 04:43	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*80-120*	*10/06/16 04:43*	*10/06/16 04:43*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*96.4 %*	*80-120*	*10/06/16 04:43*	*10/06/16 04:43*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*108 %*	*80-120*	*10/06/16 04:43*	*10/06/16 04:43*	*EPA 8260 B*				
Surrogate: Toluene-d8		*103 %*	*80-120*	*10/06/16 04:43*	*10/06/16 04:43*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

MW-8

1610058-09 (Aqueous) Sampled: 10/04/16 12:04

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	**440**	20.0	µg/L	10/06/16 06:01	10/06/16 18:02	EPA 5030B	EPA 8260 B	A	JMG	D1
1,3,5-Trimethylbenzene	**121**	20.0	µg/L	10/06/16 06:01	10/06/16 18:02	EPA 5030B	EPA 8260 B	A	JMG	D1
Benzene	**90.9**	20.0	µg/L	10/06/16 06:01	10/06/16 18:02	EPA 5030B	EPA 8260 B	A	JMG	D1
Ethylbenzene	**66.8**	2.00	µg/L	10/06/16 06:01	10/06/16 06:01	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	**20.7**	2.00	µg/L	10/06/16 06:01	10/06/16 06:01	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	10/06/16 06:01	10/06/16 06:01	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	**73.6**	2.00	µg/L	10/06/16 06:01	10/06/16 06:01	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	**25.9**	2.00	µg/L	10/06/16 06:01	10/06/16 06:01	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	**89.5**	2.00	µg/L	10/06/16 06:01	10/06/16 06:01	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	**298**	40.0	µg/L	10/06/16 06:01	10/06/16 18:02	EPA 5030B	EPA 8260 B	A	JMG	D1
Xylenes, Total	**388**	42.0	µg/L	10/06/16 06:01	10/06/16 18:02	EPA 5030B	EPA 8260 B	A	JMG	CC, D1
Surrogate: 1,2-Dichloroethane-d4		*99.2 %*	*80-120*	*10/06/16 06:01*	*10/06/16 06:01*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*100 %*	*80-120*	*10/06/16 06:01*	*10/06/16 06:01*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*105 %*	*80-120*	*10/06/16 06:01*	*10/06/16 06:01*	*EPA 8260 B*				
Surrogate: Toluene-d8		*103 %*	*80-120*	*10/06/16 06:01*	*10/06/16 06:01*	*EPA 8260 B*				

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

Stream

1610058-10 (Aqueous) Sampled: 10/04/16 13:00

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 05:09	10/06/16 05:09	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*80-120*	*10/06/16 05:09*	*10/06/16 05:09*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*93.8 %*	*80-120*	*10/06/16 05:09*	*10/06/16 05:09*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*110 %*	*80-120*	*10/06/16 05:09*	*10/06/16 05:09*	*EPA 8260 B*				
Surrogate: Toluene-d8		*105 %*	*80-120*	*10/06/16 05:09*	*10/06/16 05:09*	*EPA 8260 B*				

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1610058
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/18/16 16:51

Duplicate

1610058-11 (Aqueous) Sampled: 10/04/16 12:48

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	**44.3**	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	**3.16**	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**17.5**	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	**4.42**	4.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	10/06/16 05:35	10/06/16 05:35	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*80-120*	*10/06/16 05:35*	*10/06/16 05:35*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*95.6 %*	*80-120*	*10/06/16 05:35*	*10/06/16 05:35*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*108 %*	*80-120*	*10/06/16 05:35*	*10/06/16 05:35*	*EPA 8260 B*				
Surrogate: Toluene-d8		*102 %*	*80-120*	*10/06/16 05:35*	*10/06/16 05:35*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc 5190 White Oak Dr Indiana PA, 15701	Project Name: Indiana, PA Project Number: 4644.15.01 Lab Project Manager: Stephen Gampe	**Lab ID#:** 1610058 **Reported:** 10/18/16 16:51

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	09/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

D1	The sample was analyzed at a dilution.
CC	Calculated analytes are reported based on unrounded results of the individual analytes used in the calculation. Therefore, using the rounded values of the analytes as reported may lead to a result that varies slightly from the reported result.
RL	Reporting Limit - either the practical quantitation limit or the method detection limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

BALL POINT PEN ONLY

Billing Group:	Phase: FA	PROJECT NAME: GW Sampling
MR Project #: 4644.15.01		SITE LOCATION: Indiana, Pa
CLIENT: Vennards		SAMPLER(S): BA / HH

NOTES:
Received On Ice: Y / N
Sample Temp: 5.0
PWSID #:
Seal In Tack: Y / N
Other:
Comments:

MOUNTAIN RESEARCH LL
825 25th Street, Altoona, PA 16601 (814) 949-2034 (80
110 McCracken Run Road, Dubois, PA 15801 (814) 371-6030 Fa

CHAIN OF CUSTODY RECORD

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID.NO.	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B							Preserve	LAB NUMBER
TRIP BLANK	10/4/16	0712	X		AQ	2-40ML VOA	2A	X							HCL	01
MW-1		1222														02
MW-2		1238														03
MW-3		1213														04
MW-4		1248														05
MW-5		1208														06
MW-6		0958														07
MW-7		1023														08

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Lab WO #:	Log In Time:
[signature]	10/4/16	1501	[signature]	10/4/16	15.01	1410058	10:18
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Labeled By:	Staff: Ed
							Date: 10/5/16

Page 1 of 2

White - Lab; Blue - File; Yellow - Project Manager; Pink - Staff

H:\H\HYDRO\Field Forms\C-O-C\Blank COC v1 04 08

BALL POINT PEN ONLY

00001

Billing Group:	Phase: FA	PROJECT NAME GW Sampling
MR Project # 4644.15.01		SITE LOCATION Indiana, Pa
CLIENT Vennards		SAMPLER(S) BA / HH

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CHAIN OF CUSTODY RECORD

NOTES:

Received On Ice: (Y) / N

Sample Temp: 5.0°C

PWSID #:

Seal In Tack: Y / N

Other:

Comments:

MR PROJ. MGR. MK

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

SAMPLE ID.NO.	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	Analyses Requested: 8260B							Preserve	LAB NUMBER
MW-8	10/4/16	1204	X			2-40ML VOA	2A	X							HCL	09
Stream	↓	1300	↓			↓	↓	↓							↓	10
Duplicate	↓	1246	↓			↓	↓	↓							↓	11

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Lab WO #:	Log In Time:
[illegible]	10/4/16	1501	[illegible]	10/4/16	1301	1610058	1018
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE	TIME	Labeled By:	Staff: [illegible]
							Date: 10/5/16

Page 2 of 2

White - Lab; Blue - File; Yellow - Project Manager; Pink - Staff

H:\HHYDRO\Field Forms\C-O-C\Blank COC [illegible]

MOUNTAIN RESEARCH SAMPLE RECEIPT PROTOCOL

WORK ORDER: 1610058

CLIENT: Vennards

DATE SAMPLED: 10/4/16 DATE RECEIVED: 10/4/16 TIME RECEIVED: 5:01

1. CHECK ALL THAT APPLY: PA ☐ ~~WV~~ ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☑

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 22

4. IS THERE HEADSPACE PRESENT FOR VOLATILES/ODOR SAMPLES? YES ☐ NO (circled)

5. WERE THE SAMPLES RECEIVED ON ICE? YES ☐ NO ☑

IF NO, EXPLAIN: _____

6. RECEIVING TEMPERATURE: 5.0 °C °C BOTTLE(S) TEMPED: _____

7. WERE THE SAMPLES PROPERLY PRESERVED? YES ☐ ~~NO~~ ☐

IF NO, EXPLAIN: _____

8. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☑ NO ☐

IF NO, EXPLAIN: _____

9. WAS THE COC FILLED OUT PROPERLY? YES ☐ ~~NO~~ ☐

IF NO, EXPLAIN: _____

10. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☐ ~~NO~~ ☐

IF NO, EXPLAIN: _____

11. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☑

IF YES, EXPLAIN: _____

12. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☑

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

13. IS SUBCONTRACTING REQUIRED? YES ☐ ~~NO~~ ☐

IF YES, WHAT ANALYSES? _____

14. WAS THE CLIENT CONTACTED? YES ☐ NO ☑ IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: CLIENT SPOKEN TO: DATE/TIME:

OUTCOME:

SIGNATURE: K Oe

L60.30 A r1 Sample Receipt Form

For MR Use Only

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PADEP #33-00258
EPA Lab #PA00155

03 October 2016

Lab ID #: 1609382

Richard Vennard
Vennard Crossroads Convenience, Inc
5190 White Oak Dr
Indiana, PA 15701

RE: Indiana, PA

Enclosed are the results of analyses for samples received by the laboratory on 09/19/16 17:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Stephen Gampe

Stephen Gampe
Assistant Laboratory Manager

Authorized Reviewer

MOUNTAIN RESEARCH, LLC

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/03/16 16:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-5	1609382-01	Aqueous	Grab	09/19/16 15:49	09/19/16 17:20
MW-6	1609382-02	Aqueous	Grab	09/19/16 15:52	09/19/16 17:20
MW-7	1609382-03	Aqueous	Grab	09/19/16 16:25	09/19/16 17:20
MW-8	1609382-04	Aqueous	Grab	09/19/16 16:12	09/19/16 17:20
Trip Blank	1609382-05	Aqueous	Grab	09/19/16 06:20	09/19/16 17:20

Mountain Research, LLC

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/03/16 16:47

MW-5

1609382-01 (Aqueous) Sampled: 09/19/16 15:49

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	09/22/16 19:52	09/22/16 19:52	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*98.3 %*	*80-120*	*09/22/16 19:52*	*09/22/16 19:52*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*93.9 %*	*80-120*	*09/22/16 19:52*	*09/22/16 19:52*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*106 %*	*80-120*	*09/22/16 19:52*	*09/22/16 19:52*	*EPA 8260 B*				
Surrogate: Toluene-d8		*104 %*	*80-120*	*09/22/16 19:52*	*09/22/16 19:52*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 10/03/16 16:47
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

MW-6

1609382-02 (Aqueous) Sampled: 09/19/16 15:52

Mountain Research, LLC

Volatile Organic Compounds by GC/MS

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	09/22/16 20:18	09/22/16 20:18	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*98.4 %*	*80-120*	*09/22/16 20:18*	*09/22/16 20:18*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*94.0 %*	*80-120*	*09/22/16 20:18*	*09/22/16 20:18*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*108 %*	*80-120*	*09/22/16 20:18*	*09/22/16 20:18*	*EPA 8260 B*				
Surrogate: Toluene-d8		*104 %*	*80-120*	*09/22/16 20:18*	*09/22/16 20:18*	*EPA 8260 B*				

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Stephen Gampe

Stephen Gampe, Assistant Laboratory Manager

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/03/16 16:47

MW-7

1609382-03 (Aqueous) Sampled: 09/19/16 16:25

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	**2.30**	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	09/22/16 20:44	09/22/16 20:44	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*80-120*	*09/22/16 20:44*	*09/22/16 20:44*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*97.2 %*	*80-120*	*09/22/16 20:44*	*09/22/16 20:44*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*106 %*	*80-120*	*09/22/16 20:44*	*09/22/16 20:44*	*EPA 8260 B*				
Surrogate: Toluene-d8		*105 %*	*80-120*	*09/22/16 20:44*	*09/22/16 20:44*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 10/03/16 16:47
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

MW-8

1609382-04 (Aqueous) Sampled: 09/19/16 16:12

Mountain Research, LLC

Volatile Organic Compounds by GC/MS

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
1,2,4-Trimethylbenzene	**196**	10.0	µg/L	09/22/16 21:10	09/23/16 19:49	EPA 5030B	EPA 8260 B	A	JMG	D1
1,3,5-Trimethylbenzene	**85.9**	10.0	µg/L	09/22/16 21:10	09/23/16 19:49	EPA 5030B	EPA 8260 B	A	JMG	D1
Benzene	**71.3**	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	**36.4**	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	**10.8**	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	**33.7**	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	**21.5**	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	**64.0**	2.00	µg/L	09/22/16 21:10	09/22/16 21:10	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	**165**	20.0	µg/L	09/22/16 21:10	09/23/16 19:49	EPA 5030B	EPA 8260 B	A	JMG	D1
Xylenes, Total	**229**	22.0	µg/L	09/22/16 21:10	09/23/16 19:49	EPA 5030B	EPA 8260 B	A	JMG	CC, D1
Surrogate: 1,2-Dichloroethane-d4		*99.5 %*	*80-120*	*09/22/16 21:10*	*09/22/16 21:10*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*101 %*	*80-120*	*09/22/16 21:10*	*09/22/16 21:10*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*98.2 %*	*80-120*	*09/22/16 21:10*	*09/22/16 21:10*	*EPA 8260 B*				
Surrogate: Toluene-d8		*107 %*	*80-120*	*09/22/16 21:10*	*09/22/16 21:10*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:** 10/03/16 16:47
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	

Trip Blank

1609382-05 (Aqueous) Sampled: 09/19/16 06:20

Analyte	Result	RL	Units	Prepared	Analyzed	Prep Method	Method	Lab	Analyst	Notes
Mountain Research, LLC										
Volatile Organic Compounds by GC/MS										
1,2,4-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
1,3,5-Trimethylbenzene	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Benzene	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Ethylbenzene	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Isopropylbenzene (Cumene)	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
MTBE	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Naphthalene	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Toluene	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Xylene o	<2.00	2.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Xylene p/m	<4.00	4.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	
Xylenes, Total	<6.00	6.00	µg/L	09/22/16 21:36	09/22/16 21:36	EPA 5030B	EPA 8260 B	A	JMG	CC
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*80-120*	*09/22/16 21:36*	*09/22/16 21:36*	*EPA 8260 B*				
Surrogate: 4-Bromofluorobenzene		*97.5 %*	*80-120*	*09/22/16 21:36*	*09/22/16 21:36*	*EPA 8260 B*				
Surrogate: Dibromofluoromethane		*109 %*	*80-120*	*09/22/16 21:36*	*09/22/16 21:36*	*EPA 8260 B*				
Surrogate: Toluene-d8		*105 %*	*80-120*	*09/22/16 21:36*	*09/22/16 21:36*	*EPA 8260 B*				

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Vennard Crossroads Convenience, Inc	Project Name: Indiana, PA	**Lab ID#:** 1609382
5190 White Oak Dr	Project Number: 4644.15.01	**Reported:**
Indiana PA, 15701	Lab Project Manager: Stephen Gampe	10/03/16 16:47

Certifications

Code	Description	Number	Expires
MDDOE	Maryland Department of the Environment	257	09/30/2016
PADEP-Altoona	Pennsylvania Department of Environmental Protection	009	03/31/2017
WVDEP	West Virginia Department of Environmental Protection	225	12/31/2016
PADEP-DuBois	Pennsylvania Department of Environmental Protection	008	09/30/2016

Notes and Definitions

D1	The sample was analyzed at a dilution.
CC	Calculated analytes are reported based on unrounded results of the individual analytes used in the calculation. Therefore, using the rounded values of the analytes as reported may lead to a result that varies slightly from the reported result.
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
dry	Sample results reported on a dry weight basis
A	Analysis Performed by Mountain Research Altoona Laboratory - PADEP #07-00418
D	Analysis Performed by Mountain Research DuBois Laboratory - PADEP # 33-00258

Billing Group:	Phase:	PROJECT NAME
	GW Samp	GW Sampling
MR Project #		SITE LOCATION
4644.15.01		Indiana, PA
CLIENT		SAMPLER(S)
Vennards		KG LM

MOUNTAIN RESEARCH LLC

825 25th Street, Altoona, PA 16601 (814) 949-

110 McCracken Run Road, Dubois, PA 15801 (814) 371-

CHAIN OF CUSTODY RECORD

NOTES:

Received On Ice: (Y) N

Sample Temp: 8.1°C

PWSID #:

Comments:

MR PROJ. MGR.

Shipping Carrier:

Turn Around Time:
10 Day X
3 Day
1 Day

Comments:

Analyses Requested: 8260B

SAMPLE ID	DATE	TIME	GRAB	COMP	MATRIX	NUMBER OF CONTAINERS	PRODUCT CODE	8260B	Preserve	LAB NUMBER
MW-5	9-19-16	349pm	X		AQ	40mL 2-VOA	ZA	X	HCl	01
MW-6	↓	352pm	↓		↓	↓	↓	↓	↓	02
MW-7		425pm								03
MW-8		412pm								04
Trip Blank		620pm 9am								05

RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME	Lab Workorder #:	Log In Time:
[signature]	9-19-16	520pm	[signature]	9/20/16 07:00	1609382	0932
RELINQUISHED BY:	DATE	TIME	ACCEPTED BY:	DATE/TIME	Labeled By:	Staff: KC
						Date: 9/21/16

WORK ORDER: 1609306

CLIENT: Vennards

DATE SAMPLED: 9/19/16 DATE RECEIVED: 9/20/16 TIME RECEIVED: 0700

MOUNTAIN RESEARCH, LLC

1. CHECK ALL THAT APPLY: PA ☑ WV ☐ MD ☐ PUBLIC WATER SUPPLY ☐ RUSH ☐

2. WERE ANY OF THE SAMPLE CONTAINERS DAMAGED? (ARE CUSTODY SEALS BROKEN?) YES ☐ NO ☑

IF YES, EXPLAIN: _____

3. NUMBER OF CONTAINERS RECEIVED: 10

4. IS THERE HEADSPACE PRESENT FOR VOLATILES/ODOR SAMPLES? YES ☐ NO

5. WERE THE SAMPLES RECEIVED ON ICE? YES ☑ NO ☐

IF NO, EXPLAIN: _____

6. RECEIVING TEMPERATURE: 8.1 °C BOTTLE(S) TEMPED: _____

7. WERE THE SAMPLES PROPERLY PRESERVED? YES ☑ NO ☐

IF NO, EXPLAIN: _____

8. WERE THE SAMPLES COLLECTED IN THE CORRECT CONTAINERS? YES ☑ NO ☐

IF NO, EXPLAIN: _____

9. WAS THE COC FILLED OUT PROPERLY? YES ☑ NO ☐

IF NO, EXPLAIN: _____

10. DID THE SAMPLE LABEL(S) CONTAIN ADEQUATE INFO? (CLIENT/DATE/TIME/PRESERVATIVE) YES ☑ NO ☐

IF NO, EXPLAIN: _____

11. WERE ANY OF THE SAMPLES RECEIVED OUTSIDE OF HOLDING TIME? YES ☐ NO ☑

IF YES, EXPLAIN: _____

12. DO THE SAMPLES REQUIRE ANALYSES THAT HAVE A SHORT HOLDING TIME? YES ☐ NO ☑

IF YES, WHAT ANALYSES? _____ **PLEASE NOTIFY LABORATORY ANALYSTS!**

13. IS SUBCONTRACTING REQUIRED? YES ☐ NO ☐

IF YES, WHAT ANALYSES? _____

14. WAS THE CLIENT CONTACTED? YES ☐ NO ☑ IF YES, FILL OUT THE FOLLOWING:

MR EMPLOYEE INITIALS: CLIENT SPOKEN TO: DATE/TIME:

OUTCOME:

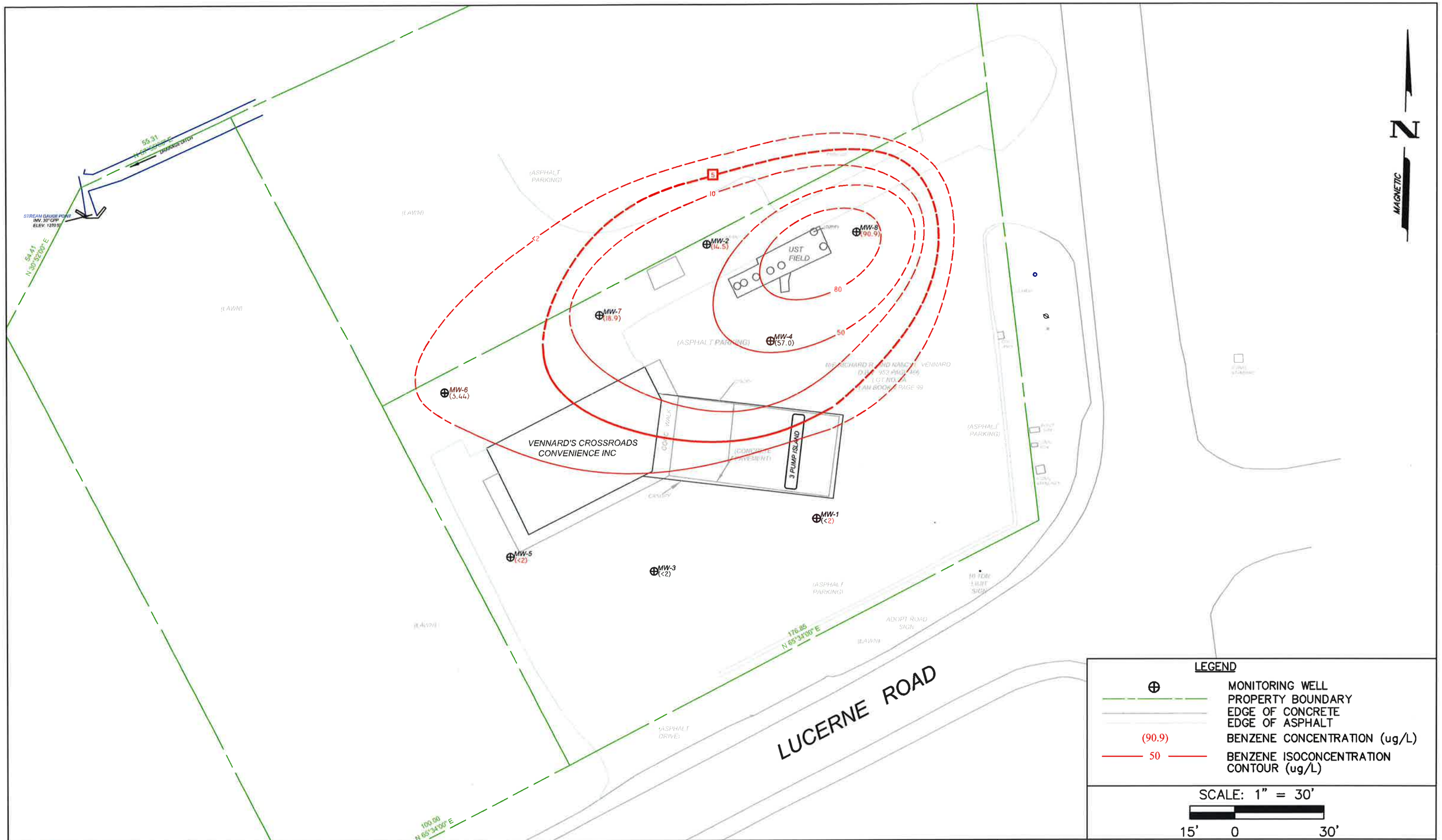
SIGNATURE: [signature]

L60.30 A r1 Sample Receipt Form

For MR Use Only

APPENDIX N

ISOCONCENTRATION MAPS



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Drawn By: JMB 11/15/16
Submitted By: MEK
Project Manager: Mike K
Checked By: MEK

4644.15.01

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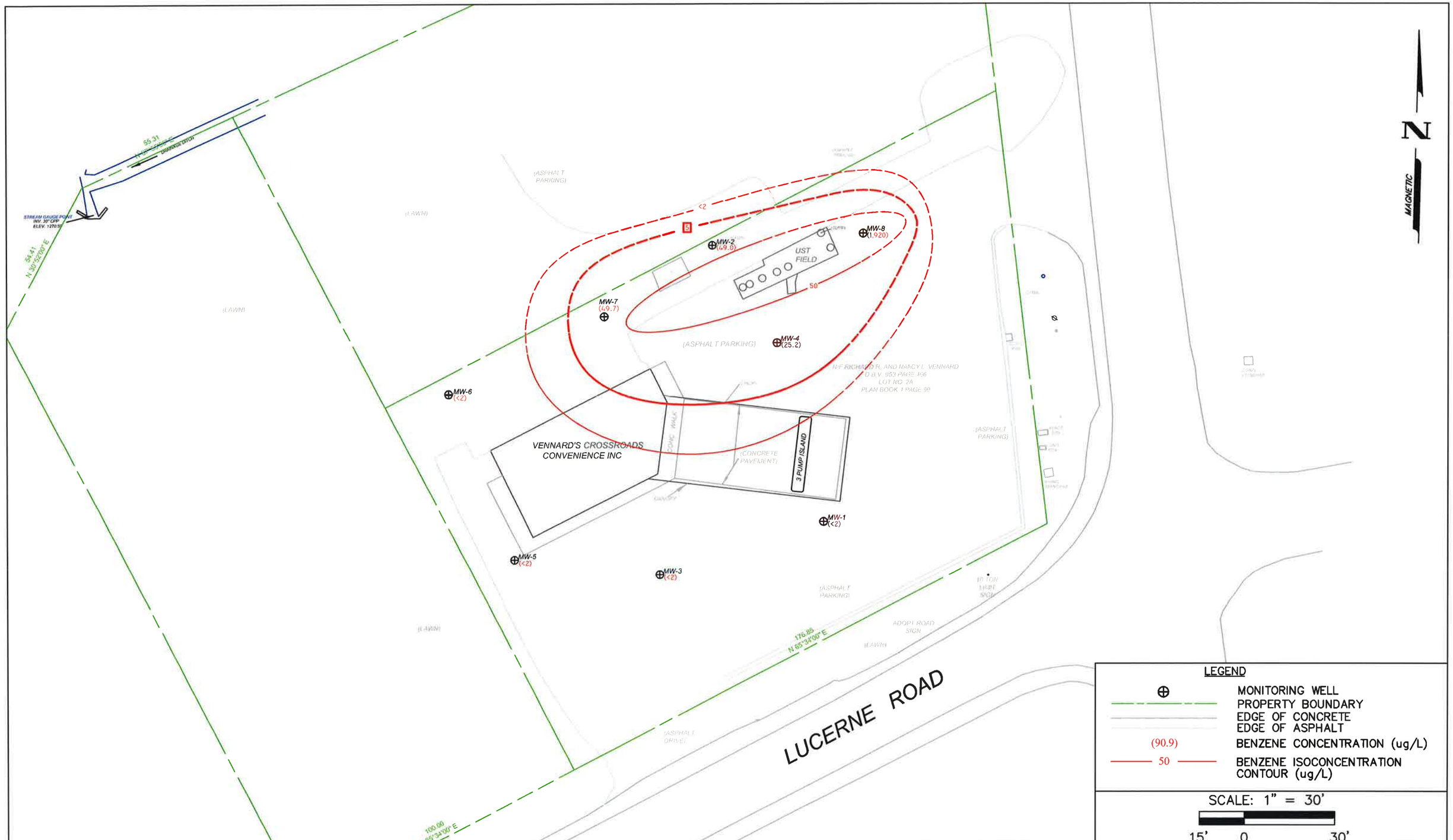
Indiana, PA

BENZENE ISOCONCENTRATION CONTOUR MAP
October 4, 2016



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Checked By: MEK

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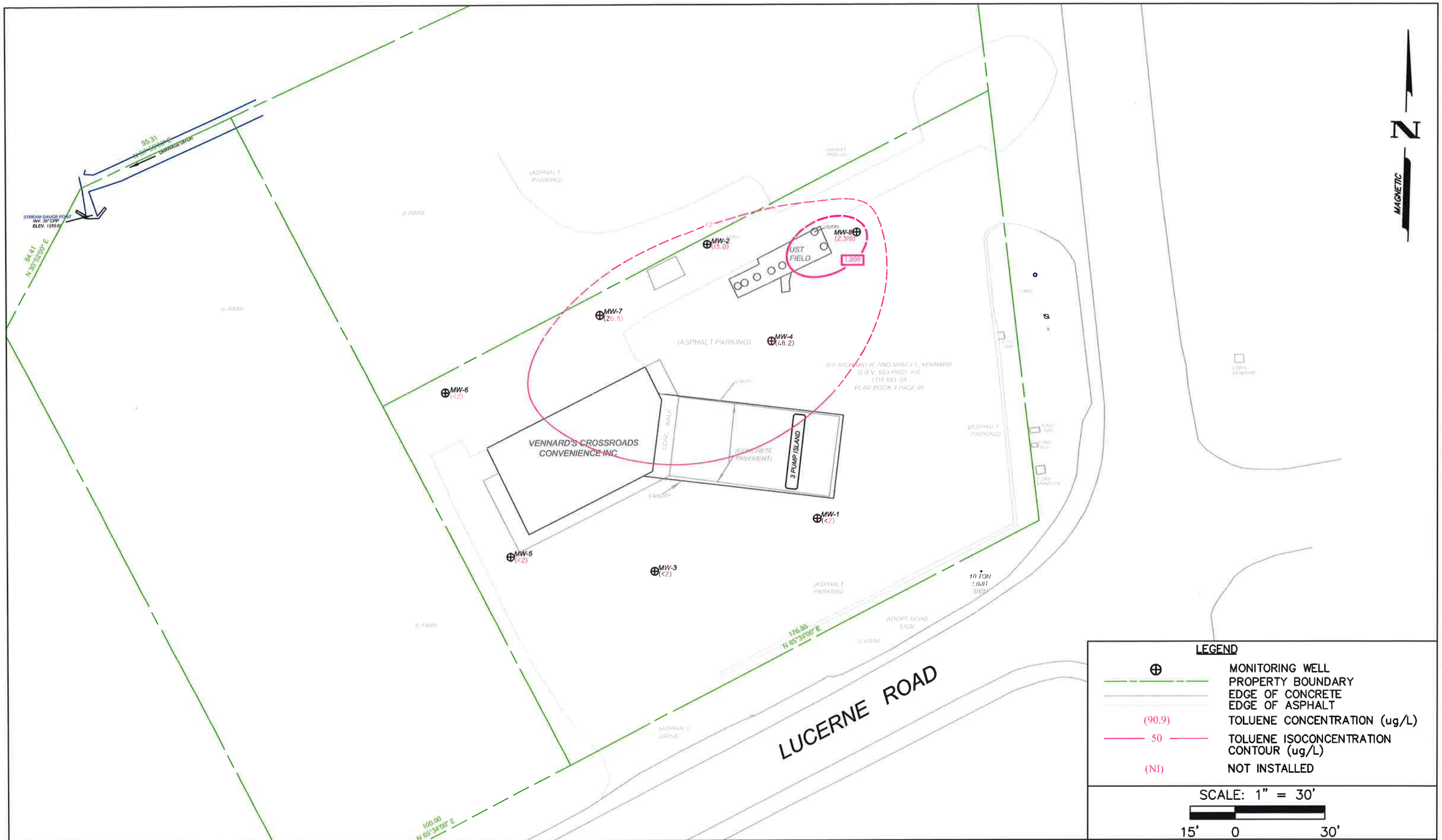
BENZENE ISOCONCENTRATION CONTOUR MAP
October 31, 2016



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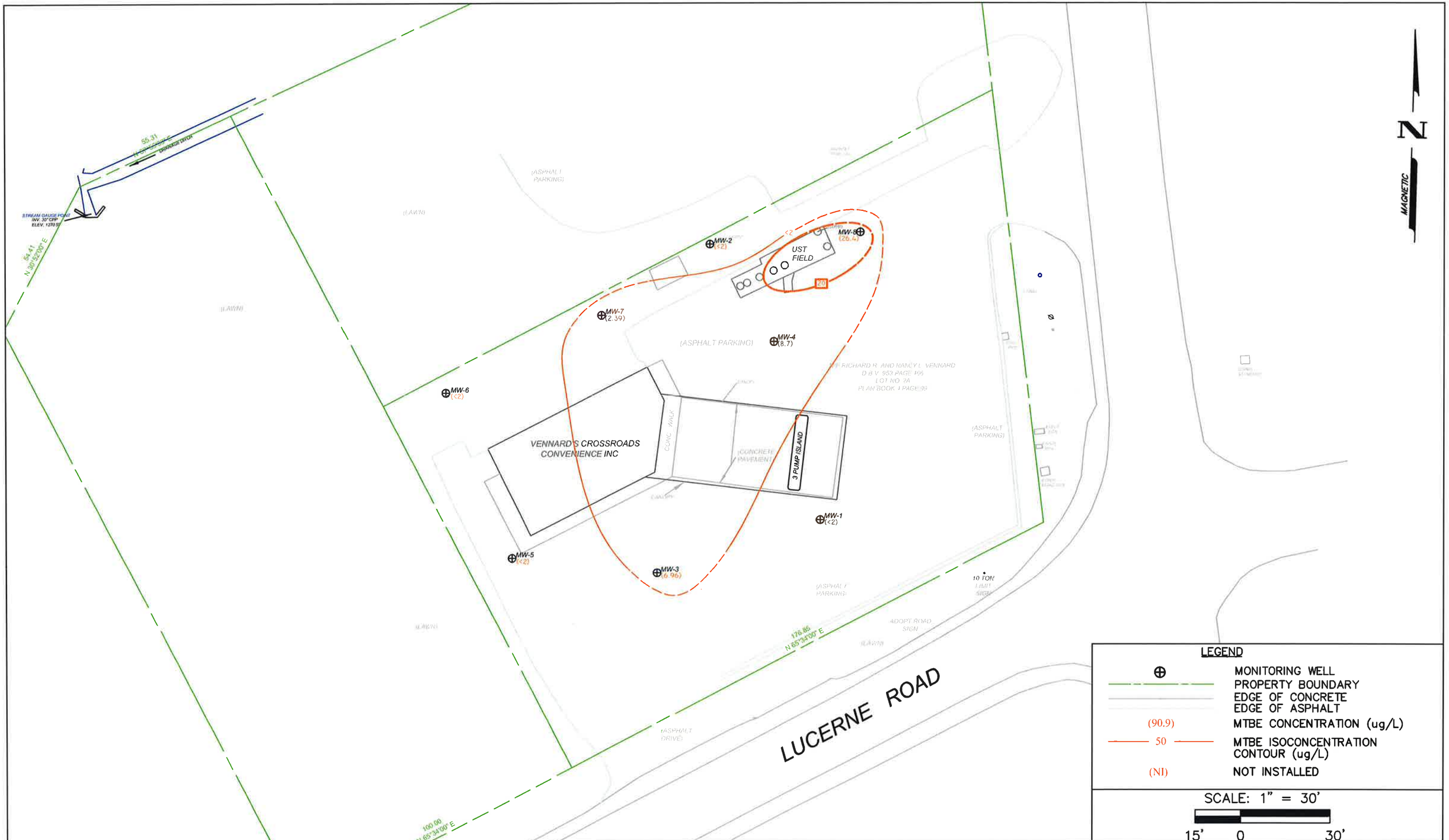
TOLUENE ISOCONCENTRATION CONTOUR MAP
October 31, 2016



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Checked By: MEK

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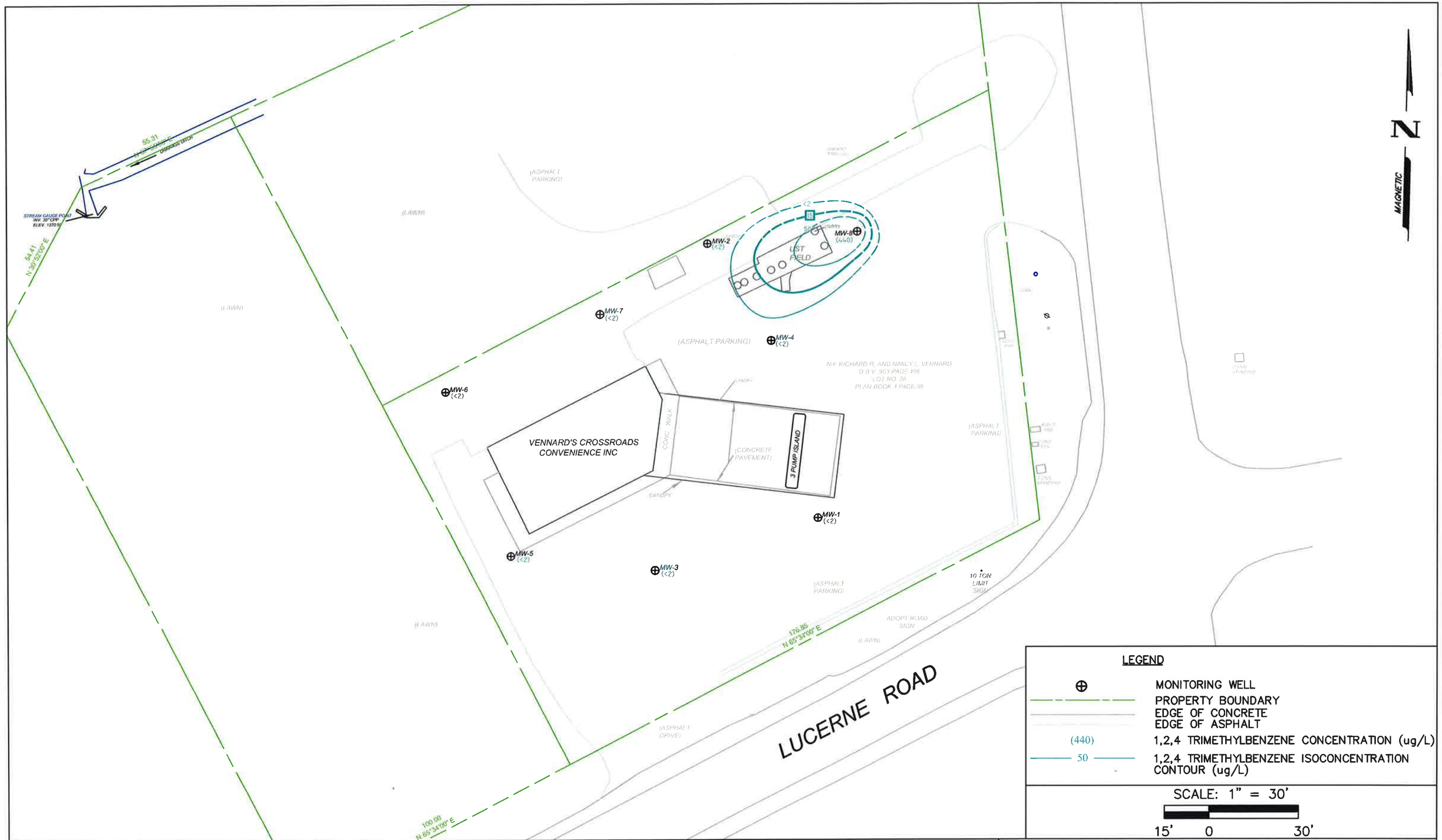
MTBE ISOCONCENTRATION CONTOUR MAP
October 31, 2016



LEGEND

⊕	MONITORING WELL
— — — —	PROPERTY BOUNDARY
	EDGE OF CONCRETE
	EDGE OF ASPHALT
(440)	1,2,4 TRIMETHYLBENZENE CONCENTRATION (ug/L)
—— 50 ——	1,2,4 TRIMETHYLBENZENE ISOCONCENTRATION CONTOUR (ug/L)

SCALE: 1" = 30'

15' 0 30'

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Project Manager: Mike K
Checked By: MEK

4644.15.01

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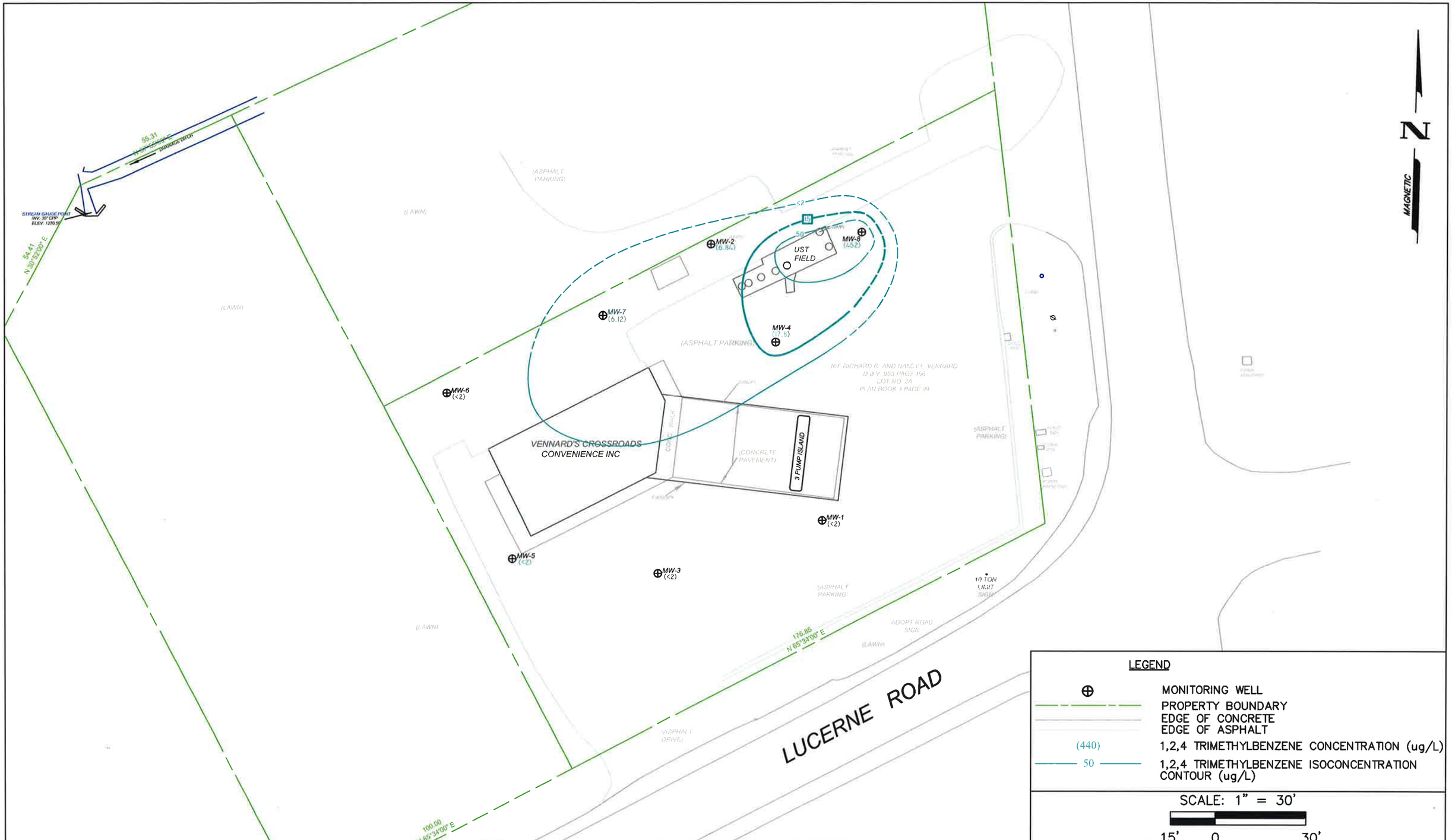
Indiana, PA

1,2,4 TRIMETHYLBENZENE ISOCONCENTRATION CONTOUR MAP
October 4, 2016



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Indiana, PA

1,2,4 TRIMETHYLBENZENE ISOCONCENTRATION CONTOUR MAP
October 31, 2016

APPENDIX O

QD MODEL INPUTS AND SENSITIVITY EVALUATION

Vennard's, Indiana, PA

1,2,4-Trimethylbenzene Calibration evaluation MW-8 to MW-7

Calibration at t= 3,839

Model	K (ft/day)	ax (ft)	λ (day-1)	Comments
1	0.028	4		will not calibrate
2	0.028	40		will not calibrate
3	0.028	400		will not calibrate
4	0.28	4		will not calibrate
5	0.28	40		will not calibrate
6	0.28	400	0.00117	steady state, model used
7	2.8	4		will not calibrate
8	2.8	40	0.00163	steady state
9	2.8	400	0.0125	steady state

30 year predictive simulation t=14,796 (at steady state)

Model	K (ft/day)	ax (ft)	Distance to RUA MSC (15ug/L)	Comments
1	0.028	4		will not calibrate
2	0.028	40		will not calibrate
3	0.028	400		will not calibrate
4	0.28	4		will not calibrate
5	0.28	40		will not calibrate
6	0.28	400	52	steady state, model used
7	2.8	4		will not calibrate
8	2.8	40	50	steady state
9	2.8	400	50	steady state

Vennard's, Indiana, PA

Benzene Scenario 1 Calibration evaluation MW-8 to MW-7 to MW-6

Calibration at t= 3,839

Model	K (ft/day)	ax (ft)	λ (day-1)	Comments
1	0.028	14		will not calibrate
2	0.028	140		will not calibrate
3	0.028	1400	0.00023	steady state, model used
4	0.28	14		will not calibrate
5	0.28	140	0.00045	steady state
6	0.28	1400	0.0047	steady state
7	2.8	14	0.002	steady state
8	2.8	140	0.0062	steady state
9	2.8	1400	0.047	steady state

30 year predictive simulation t=14,796 (at steady state)

Model	K (ft/day)	ax (ft)	Distance to RUA MSC (5ug/L)	Comments
1	0.028	14		will not calibrate
2	0.028	140		will not calibrate
3	0.028	1400	182	steady state, model used
4	0.28	14		will not calibrate
5	0.28	140	153	steady state
6	0.28	1400	129	steady state
7	2.8	14	127	steady state
8	2.8	140	127	steady state
9	2.8	1400	129	steady state

Vennard's, Indiana, PA

Benzene Scenario 2 Calibration evaluation MW-8 to MW-4 to MW-5

Calibration at t= 3,839

Model	K (ft/day)	ax (ft)	λ (day-1)	Comments
1	0.028	14		will not calibrate
2	0.028	140		will not calibrate
3	0.028	1400	0.0008	steady state, model used
4	0.28	14		will not calibrate
5	0.28	140	0.00102	steady state
6	0.28	1400	0.009	steady state
7	2.8	14	0.0031	steady state
8	2.8	140	0.0109	steady state
9	2.8	1400	0.09	steady state

30 year predictive simulation t=14,796 (at steady state)

Model	K (ft/day)	ax (ft)	Distance to RUA MSC (5ug/L)	Comments
1	0.028	14		will not calibrate
2	0.028	140		will not calibrate
3	0.028	1400	105	steady state, model used
4	0.28	14		will not calibrate
5	0.28	140	103	steady state
6	0.28	1400	99	steady state
7	2.8	14	99	steady state
8	2.8	140	100	steady state
9	2.8	1400	99	steady state

Vennard's, Indiana, PA
Quick Domenico overburden groundwater 1,2,4-trimethylbenzene model input and sensitivity analysis MW-8 to MW-7

Model Input	Input value	Rationale for input	Sensitivity analysis
Initial concentration	.440 mg/L	Maximum value observed (sampling event 10/4/2016)	QD is highly sensitive to this value. In general, one order of magnitude change in initial concentration will change the output of the model by the same order of magnitude.
A(x)	400 feet	Initial value set at 4 feet and was adjusted during sensitivity analysis.	QD is highly sensitive to this value especially near the tail end of modeled contaminant plume. In general, one order of magnitude change in A (x) will change the output of the model by two orders of magnitude.
A(Y)	.4 feet	Initial value set to 1/10 of A(x) and retained during model calibration	QD is moderately sensitive to this value. A change in one order of magnitude larger will cause model centerline values to decrease.
A(z)	0.001 feet	PADEP suggested value was retained during model calibration	QD is not sensitive to this value. A change in one order of magnitude larger caused no change in model output.
Lambda	0.0045	Initial value set to PADEP supplied value of 0.0123 and adjusted during calibration.	QD is highly sensitive to this value. A change in one order of magnitude larger will cause model centerline value to decrease significantly.
Source Width	40 feet	Based on estimated width of source area using isoconcentration map RUA MSC line .	QD is not sensitive to this value. A change in +50 feet yields no change in model output.
Source Thickness	3 feet	Thickness of source area based on depth at which constituents have been identified at concentrations above MSCs in soil borings	QD is not sensitive to this value. A change in +/- 5 feet yields no change in model output.
Time	3,839 days*	Calculated as days between ban of MTBE use (5/1/2006) and the date of model calibration (10/3/2016)	QD is not sensitive to this value. A change of 100 days yields no change in model output
Hydraulic Conductivity	0.28 feet/day	Initial value set to geometric mean K value of 0.028 ft/day (average from 9/2016 aquifer testing) and adjusted during sensitivity analysis.	QD is highly sensitive to this value. A change in one order of magnitude will cause the model output to change significantly
Gradient	0.021 feet/foot	Calculated gradient between MW-8 and MW-7 using data obtained 10/4/2016	QD is moderately sensitive to this value. A change of + 0.01 feet/foot yields higher model output values.
Effective Porosity	0.39 decimal fraction	Site Specific Value based on geotechnical analysis	QD is sensitive to this value. A change in + .05 causes a decrease in model output.
Soil Bulk Density	1.6 g/cm3	Site Specific Value based on geotechnical analysis	QD is moderately sensitive to this value. A change in + 0.1 causes a decrease in model output.
KOC	2200	Value set to PADEP value for 1,2,4-trimethylbenzene	QD is sensitive to this value. A change in + 10 causes a decrease in model output.
Fraction of Organic Carbon	0.0024 decimal fraction	Site Specific Value based on geotechnical analysis	QD is moderately sensitive to this value. A change in one order of magnitude larger yields significantly lower model output.

* Although the release was confirmed in September 2015, because MTBE is present in the analyzed media, it is interpreted the release occurred while MTBE was still in use. Because the actual release date is unknown, the date MTBE use was banned (5/1/2006) was used as a substitute release date

Vennard's, Indiana, PA
Quick Domenico overburden groundwater benzene scenario 1 model input and sensitivity analysis MW-8 to MW-7 to MW-6

Model Input	Input value	Rationale for input	Sensitivity analysis
Initial concentration	.0909 mg/L	Maximum value observed (sampling event 10/4/2016)	QD is highly sensitive to this value. In general, one order of magnitude change in initial concentration will change the output of the model by the same order of magnitude.
A(x)	14 feet	Initial value set at 14 feet and was retained during sensitivity analysis.	QD is highly sensitive to this value especially near the tail end of modeled contaminant plume. In general, one order of magnitude change in A (x) will change the output of the model by two orders of magnitude.
A(Y)	1.4 feet	Initial value set to 1/10 of A(x) and retained during model calibration	QD is moderately sensitive to this value. A change in one order of magnitude larger will cause model centerline values to decrease.
A(z)	0.001 feet	PADEP suggested value was retained during model calibration	QD is not sensitive to this value. A change in one order of magnitude larger caused no change in model output.
Lambda	0.00048	Initial value set to PADEP supplied value of 0.000958 and adjusted during calibration.	QD is highly sensitive to this value. A change in one order of magnitude larger will cause model centerline value to decrease significantly.
Source Width	160 feet	Based on estimated width of source area using isoconcentration map RUA MSC line .	QD is not sensitive to this value. A change in +50 feet yields no change in model output.
Source Thickness	3 feet	Thickness of source area based on depth at which constituents have been identified at concentrations above MSCs in soil borings	QD is not sensitive to this value. A change in +/- 5 feet yields no change in model output.
Time	3,839 days*	Calculated as days between ban of MTBE use (5/1/2006) and the date of model calibration (10/3/2016)	QD is not sensitive to this value. A change of 100 days yields no change in model output
Hydraulic Conductivity	0.028 feet/day	Initial value set to geometric mean K value of 0.028 ft/day (average from 9/2016 aquifer testing) and retained during sensitivity analysis.	QD is highly sensitive to this value. A change in one order of magnitude will cause the model output to change significantly
Gradient	0.015 feet/foot	Calculated gradient between MW-8 and MW-6 using data obtained 10/4/2016	QD is moderately sensitive to this value. A change of + 0.01 feet/foot yields higher model output values.
Effective Porosity	0.39 decimal fraction	Site Specific Value based on geotechnical analysis	QD is sensitive to this value. A change in + .05 causes a decrease in model output.
Soil Bulk Density	1.6 g/cm3	Site Specific Value based on geotechnical analysis	QD is moderately sensitive to this value. A change in + 0.1 causes a decrease in model output.
KOC	58	Value set to PADEP value for benzene	QD is sensitive to this value. A change in + 10 causes a decrease in model output.
Fraction of Organic Carbon	0.0024 decimal fraction	Site Specific Value based on geotechnical analysis	QD is moderately sensitive to this value. A change in one order of magnitude larger yields significantly lower model output.

* Although the release was confirmed in September 2015, because MTBE is present in the analyzed media, it is interpreted the release occurred while MTBE was still in use. Because the actual release date is unknown, the date MTBE use was banned (5/1/2006) was used as a substitute release date

Vennard's, Indiana, PA
Quick Domenico overburden groundwater benzene scenario 2 model input and sensitivity analysis MW-8 to MW-4 to MW-5

Model Input	Input value	Rationale for input	Sensitivity analysis
Initial concentration	.0909 mg/L	Maximum value observed (sampling event 10/4/2016)	QD is highly sensitive to this value. In general, one order of magnitude change in initial concentration will change the output of the model by the same order of magnitude.
A(x)	14 feet	Initial value set at 14 feet and was retained during sensitivity analysis.	QD is highly sensitive to this value especially near the tail end of modeled contaminant plume. In general, one order of magnitude change in A (x) will change the output of the model by two orders of magnitude.
A(Y)	1.4 feet	Initial value set to 1/10 of A(x) and retained during model calibration	QD is moderately sensitive to this value. A change in one order of magnitude larger will cause model centerline values to decrease.
A(z)	0.001 feet	PADEP suggested value was retained during model calibration	QD is not sensitive to this value. A change in one order of magnitude larger caused no change in model output.
Lambda	0.001	Initial value set to PADEP supplied value of 0.000958 and adjusted during calibration.	QD is highly sensitive to this value. A change in one order of magnitude larger will cause model centerline value to decrease significantly.
Source Width	160 feet	Based on estimated width of source area using isoconcentration map RUA MSC line .	QD is not sensitive to this value. A change in +50 feet yields no change in model output.
Source Thickness	3 feet	Thickness of source area based on depth at which constituents have been identified at concentrations above MSCs in soil borings	QD is not sensitive to this value. A change in +/- 5 feet yields no change in model output.
Time	3,839 days*	Calculated as days between ban of MTBE use (5/1/2006) and the date of model calibration (10/3/2016)	QD is not sensitive to this value. A change of 100 days yields no change in model output
Hydraulic Conductivity	0.028 feet/day	Initial value set to geometric mean K value of 0.028 ft/day (average from 9/2016 aquifer testing) and retained during sensitivity analysis.	QD is highly sensitive to this value. A change in one order of magnitude will cause the model output to change significantly
Gradient	0.017 feet/foot	Calculated gradient between MW-8 and MW-5 using data obtained 10/4/2016	QD is moderately sensitive to this value. A change of + 0.01 feet/foot yields higher model output values.
Effective Porosity	0.39 decimal fraction	Site Specific Value based on geotechnical analysis	QD is sensitive to this value. A change in + .05 causes a decrease in model output.
Soil Bulk Density	1.6 g/cm3	Site Specific Value based on geotechnical analysis	QD is moderately sensitive to this value. A change in + 0.1 causes a decrease in model output.
KOC	58	Value set to PADEP value for benzene	QD is sensitive to this value. A change in + 10 causes a decrease in model output.
Fraction of Organic Carbon	0.0024 decimal fraction	Site Specific Value based on geotechnical analysis	QD is moderately sensitive to this value. A change in one order of magnitude larger yields significantly lower model output.

* Although the release was confirmed in September 2015, because MTBE is present in the analyzed media, it is interpreted the release occurred while MTBE was still in use. Because the actual release date is unknown, the date MTBE use was banned (5/1/2006) was used as a substitute release date

APPENDIX P

QD MODEL RESULTS

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 Calibration

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

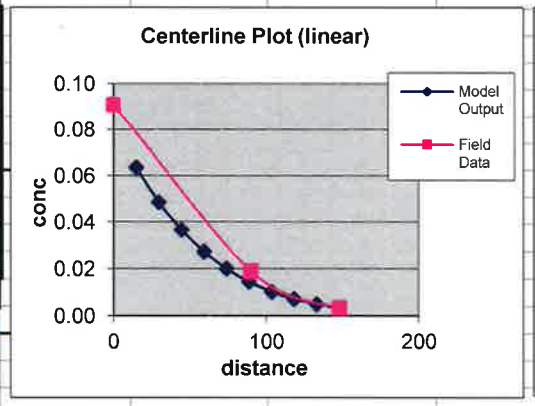
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	3839

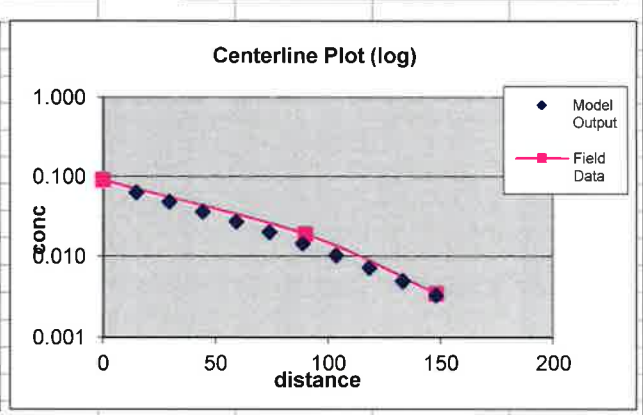
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

Point Concentration

x(ft)	y(ft)	z(ft)
148	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	148	6	0
at	3839	days =	
			0.003
			mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	148
Width (ft)	160

	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.032	0.024	0.018	0.014	0.010	0.007	0.005	0.004	0.002	0.002
0	0.064	0.049	0.037	0.027	0.020	0.015	0.010	0.007	0.005	0.003
-80	0.032	0.024	0.018	0.014	0.010	0.007	0.005	0.004	0.002	0.002
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:	Centerline C Concentration	0.0909	0.0189	0.00344
	Distance from Source	0	90	148

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 5 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

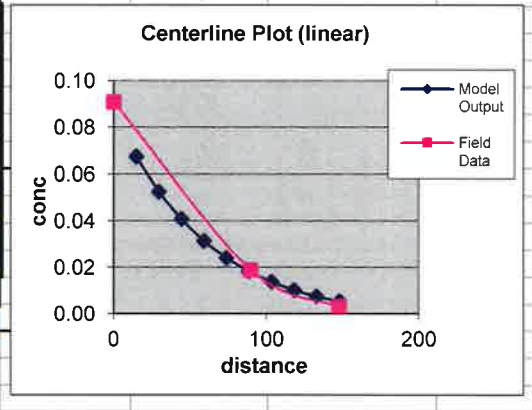
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	5665

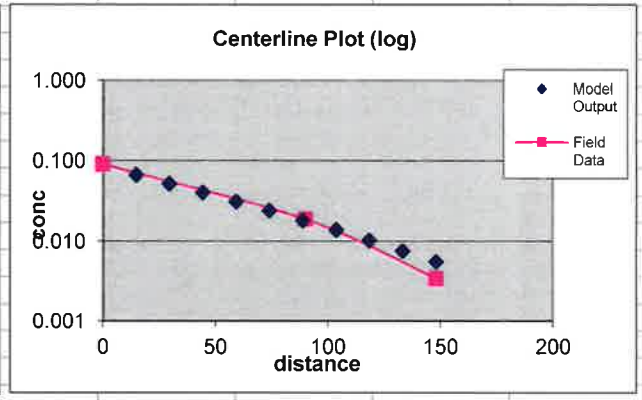
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

Point Concentration

x(ft)	y(ft)	z(ft)
149	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	149	6	0
at	5665	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	148
Width (ft)	160

	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.034	0.026	0.020	0.016	0.012	0.009	0.007	0.005	0.004	0.003
0	0.068	0.053	0.041	0.032	0.024	0.018	0.014	0.010	0.008	0.006
-80	0.034	0.026	0.020	0.016	0.012	0.009	0.007	0.005	0.004	0.003
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:					
Centerline C Concentration	0.0909	0.0189	0.00344		
Distance from Source	0	90	148		

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 10 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

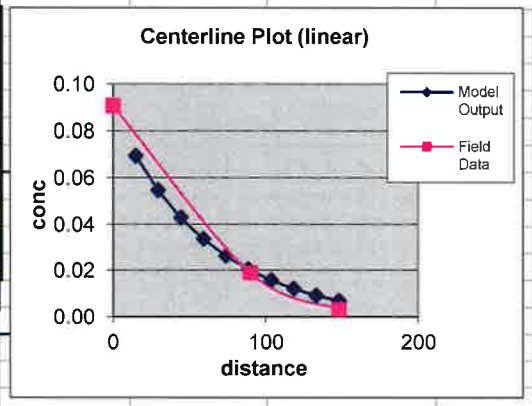
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	7491

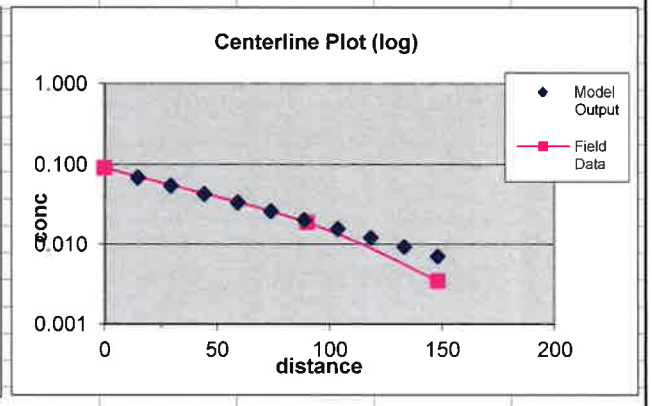
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

Point Concentration

x(ft)	y(ft)	z(ft)
162	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	162	6	0
at	7491	days =	
			0.005
			mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	148
Width (ft)	160

	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.035	0.027	0.022	0.017	0.013	0.010	0.008	0.006	0.005	0.004
0	0.070	0.055	0.043	0.034	0.026	0.021	0.016	0.012	0.009	0.007
-80	0.035	0.027	0.022	0.017	0.013	0.010	0.008	0.006	0.005	0.004
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:					
Centerline C Concentration	0.0909	0.0189	0.00344		
Distance from Source	0	90	148		

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 15 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	9317

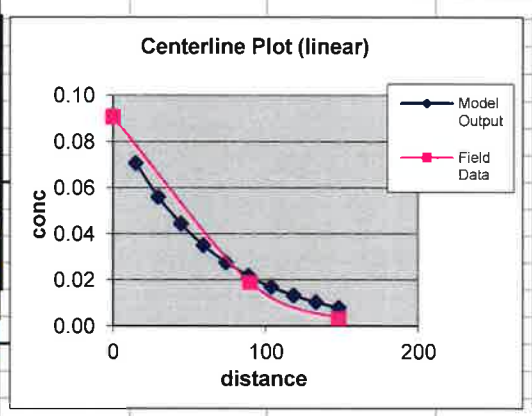
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

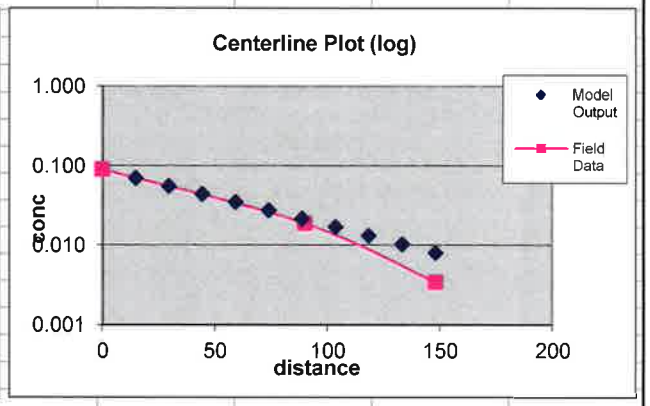
Point Concentration

x(ft)	y(ft)	z(ft)
170	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	170	6	0
at	9317	days =	
			0.005 mg/l

	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	148
	Width (ft)	160





	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.035	0.028	0.022	0.018	0.014	0.011	0.009	0.007	0.005	0.004
0	0.071	0.056	0.045	0.035	0.028	0.022	0.017	0.013	0.010	0.008
-80	0.035	0.028	0.022	0.018	0.014	0.011	0.009	0.007	0.005	0.004
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data:	**Centerline C Concentration**			0.0909	0.0189	0.00344				
	Distance from Source			0	90	148				

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 20 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

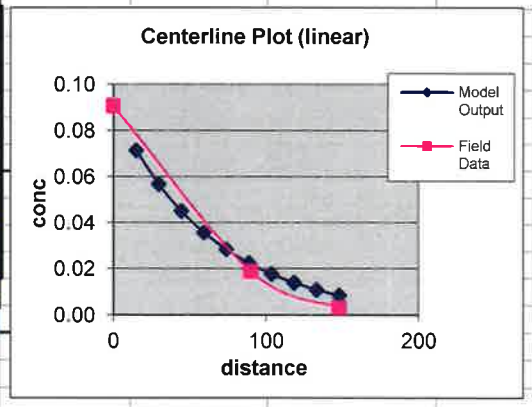
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	11144

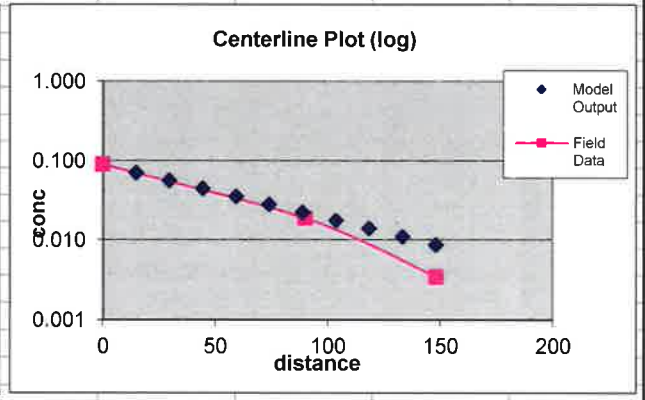
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm^3)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

Point Concentration

x(ft)	y(ft)	z(ft)
177	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	177	6	0
at	11144	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	148
Width (ft)	160

	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.036	0.028	0.023	0.018	0.014	0.011	0.009	0.007	0.006	0.004
0	0.072	0.057	0.045	0.036	0.029	0.023	0.018	0.014	0.011	0.009
-80	0.036	0.028	0.023	0.018	0.014	0.011	0.009	0.007	0.006	0.004
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:									
Centerline C Concentration	0.0909	0.0189	0.00344						
Distance from Source	0	90	148						

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 25 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	12970

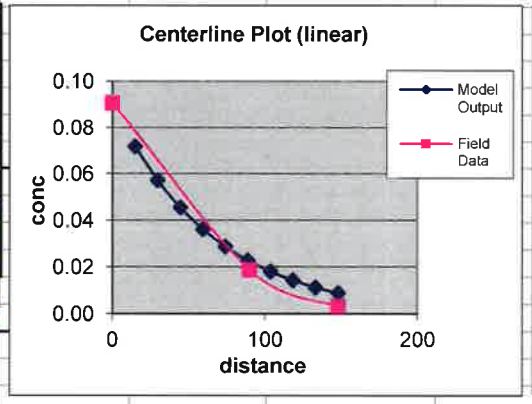
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

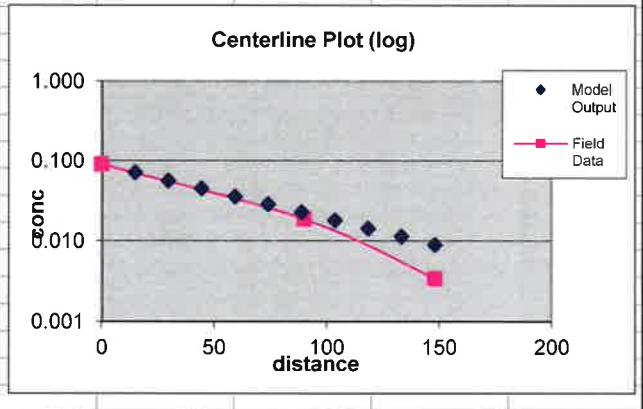
Point Concentration

x(ft)	y(ft)	z(ft)
179	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	179	6	0
at	12970	days =	0.005 mg/l

	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	148
	Width (ft)	160





	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.036	0.029	0.023	0.018	0.014	0.012	0.009	0.007	0.006	0.005
0	0.072	0.057	0.046	0.036	0.029	0.023	0.018	0.014	0.011	0.009
-80	0.036	0.029	0.023	0.018	0.014	0.012	0.009	0.007	0.006	0.005
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data:	**Centerline C Concentration**			0.0909	0.0189	0.00344				
	Distance from Source			0	90	148				

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 1 30 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

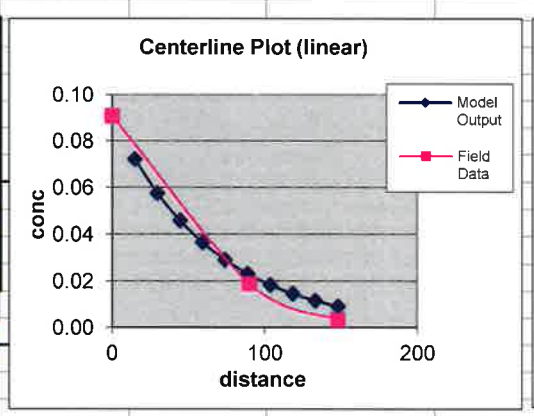
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.00023	160	3	14796

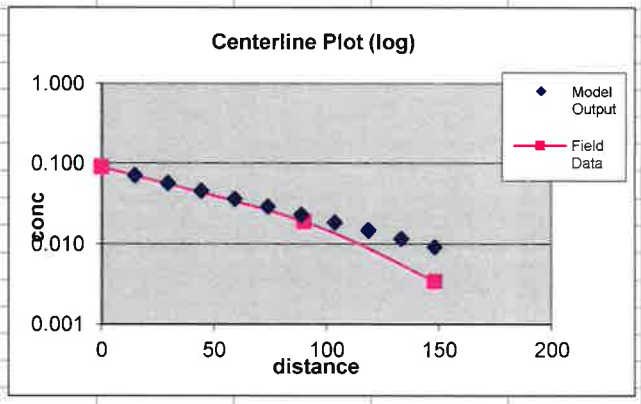
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.015	0.39	1.6	58	2.40E-03	1.571076923	0.000685468

Point Concentration

x(ft)	y(ft)	z(ft)
182	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	182	6	0
at	14796	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	148
Width (ft)	160

	14.8	29.6	44.4	59.2	74	88.8	103.6	118.4	133.2	148
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.036	0.029	0.023	0.018	0.015	0.012	0.009	0.007	0.006	0.005
0	0.072	0.058	0.046	0.037	0.029	0.023	0.019	0.015	0.012	0.009
-80	0.036	0.029	0.023	0.018	0.015	0.012	0.009	0.007	0.006	0.005
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:			
Centerline C Concentration	0.0909	0.0189	0.00344
Distance from Source	0	90	148

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 Calibration

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

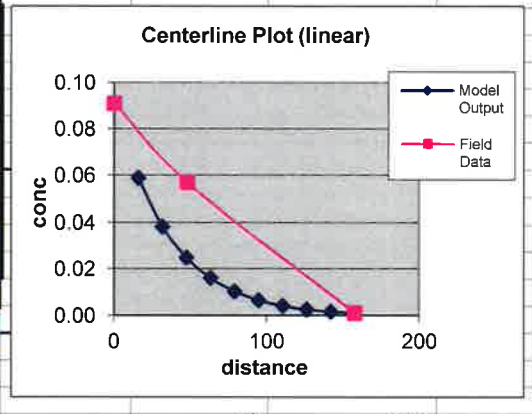
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	3839

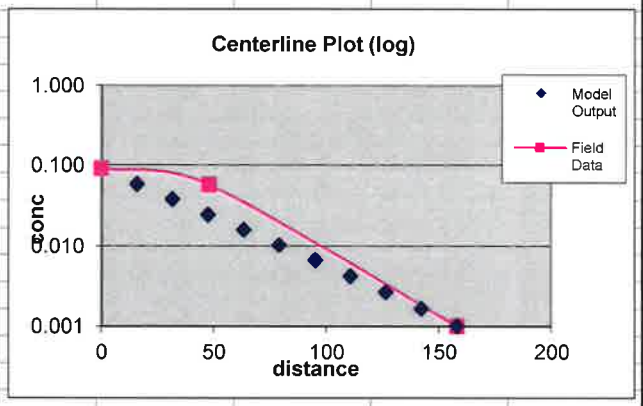
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
158	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	158	6	0
at	3839	days =	
			0.001
			mg/l





	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	158
	Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.029	0.019	0.012	0.008	0.005	0.003	0.002	0.001	0.001	0.001
0	0.059	0.038	0.025	0.016	0.010	0.007	0.004	0.003	0.002	0.001
-80	0.029	0.019	0.012	0.008	0.005	0.003	0.002	0.001	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:										
	Centerline C Concentration			0.0909	0.057	0.001				
	Distance from Source			0	48	158				

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 5 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

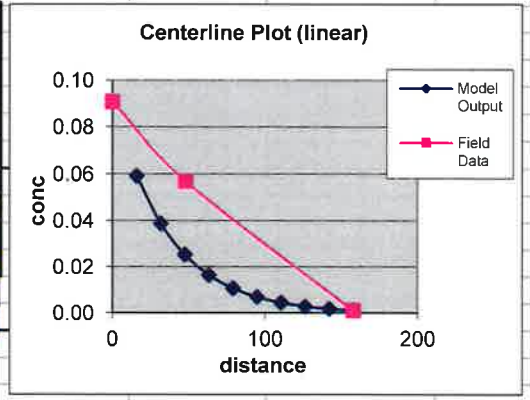
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	5665

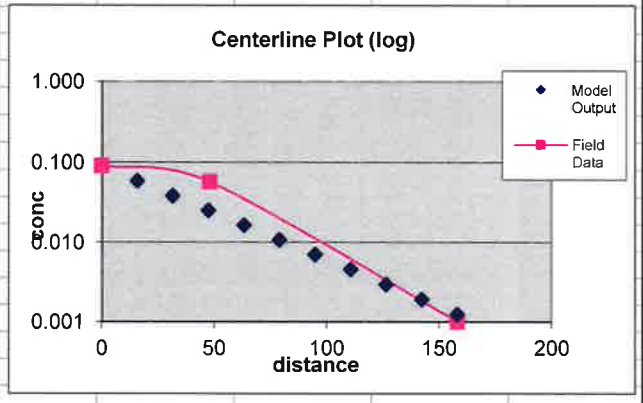
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
105	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	105	6	0
at	5665	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	158
Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.030	0.019	0.013	0.008	0.005	0.004	0.002	0.001	0.001	0.001
0	0.059	0.039	0.025	0.017	0.011	0.007	0.005	0.003	0.002	0.001
-80	0.030	0.019	0.013	0.008	0.005	0.004	0.002	0.001	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:									
Centerline C Concentration	0.0909	0.057	0.001						
Distance from Source	0	48	158						

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 10 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation

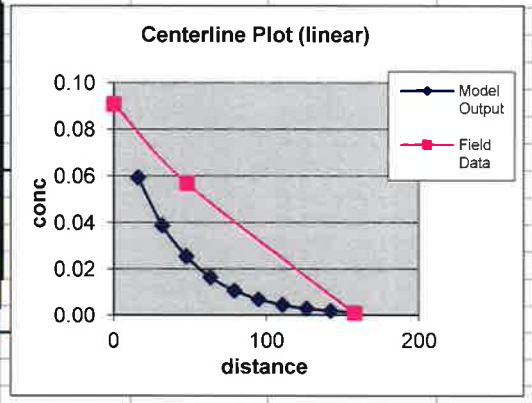
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	7491

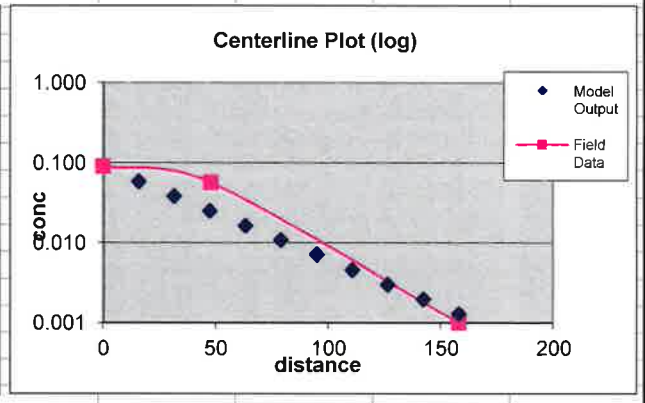
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
105	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	105	6	0
at	7491	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	158
Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.030	0.019	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
0	0.060	0.039	0.026	0.017	0.011	0.007	0.005	0.003	0.002	0.001
-80	0.030	0.019	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:					
Centerline C Concentration	0.0909	0.057	0.001		
Distance from Source	0	48	158		

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 15 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

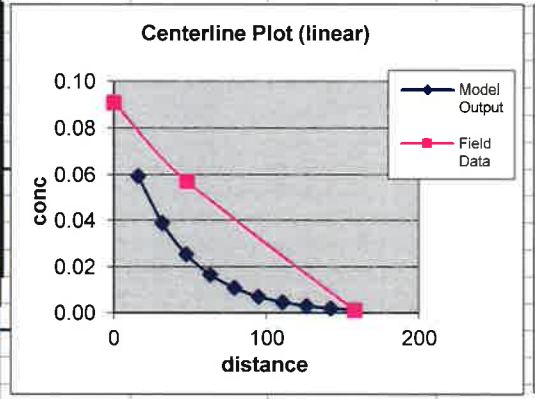
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	9317

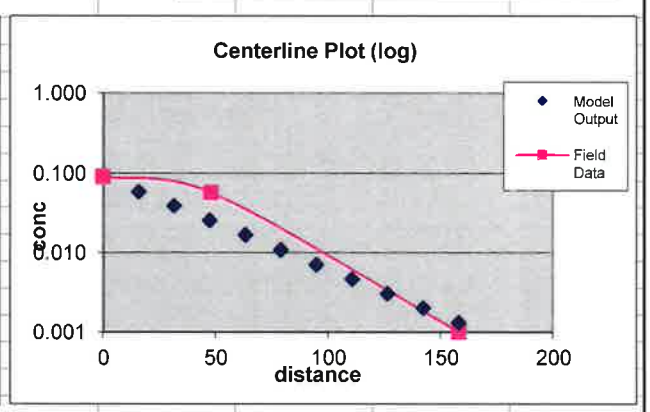
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
105	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	105	6	0
at	9317	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	158
Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
0	0.060	0.039	0.026	0.017	0.011	0.007	0.005	0.003	0.002	0.001
-80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:				
Centerline C Concentration	0.0909	0.057	0.001	
Distance from Source	0	48	158	

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 20 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

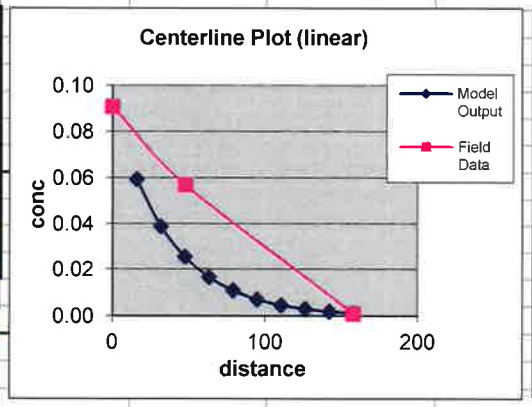
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	11144

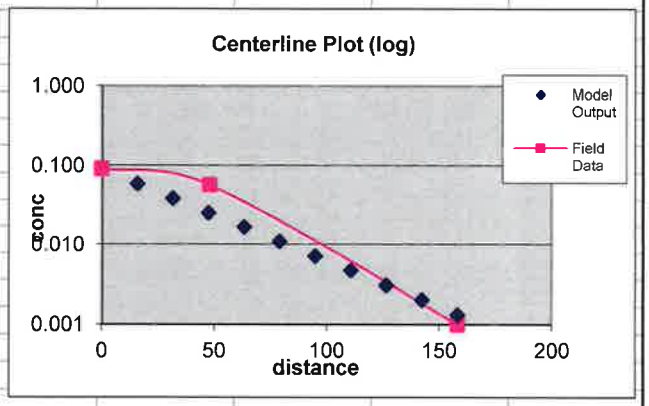
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
105	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	105	6	0
at	11144	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	158
Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
0	0.060	0.039	0.026	0.017	0.011	0.007	0.005	0.003	0.002	0.001
-80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:										
	Centerline C Concentration			0.0909	0.057	0.001				
	Distance from Source			0	48	158				

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 25 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

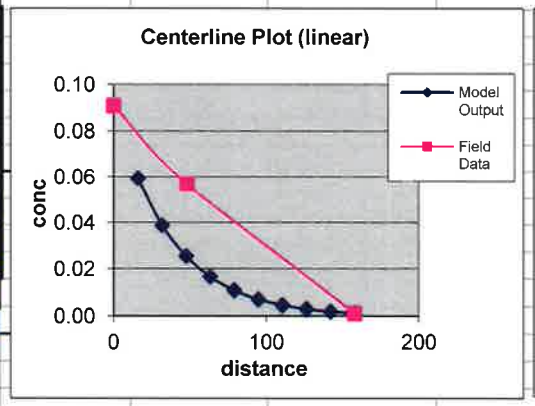
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	12970

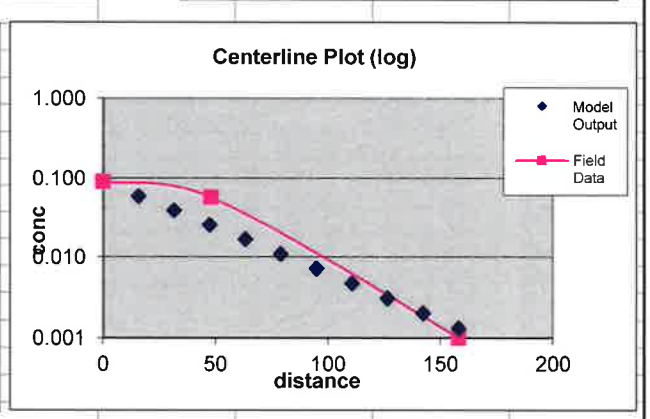
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
105	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	105	6	0
at	12970	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	158
Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
0	0.060	0.039	0.026	0.017	0.011	0.007	0.005	0.003	0.002	0.001
-80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:									
Centerline C Concentration	0.0909	0.057	0.001						
Distance from Source	0	48	158						

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	Benzene Scenario 2 30 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

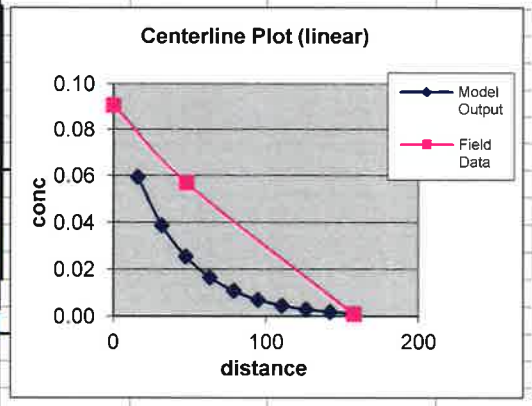
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.0909	1.40E+03	1.40E+00	1.00E-03	0.0008	160	3	14796

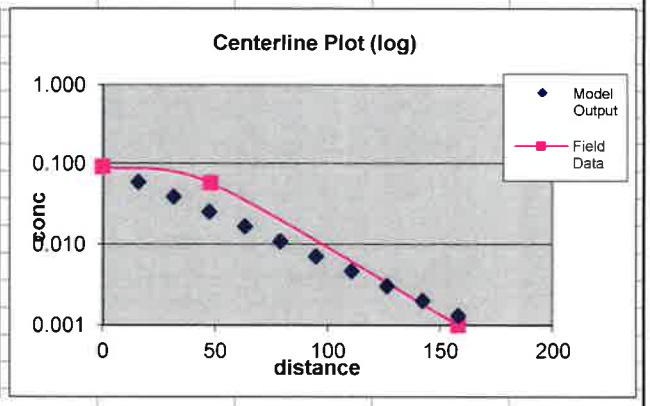
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-02	0.017	0.39	1.6	58	2.40E-03	1.571076923	0.000776864

Point Concentration

x(ft)	y(ft)	z(ft)
105	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	105	6	0
at	14796	days =	
			0.005 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	158
Width (ft)	160

	15.8	31.6	47.4	63.2	79	94.8	110.6	126.4	142.2	158
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
0	0.060	0.039	0.026	0.017	0.011	0.007	0.005	0.003	0.002	0.001
-80	0.030	0.020	0.013	0.008	0.005	0.004	0.002	0.002	0.001	0.001
-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:									
Centerline C Concentration	0.0909	0.057	0.001						
Distance from Source	0	48	158						

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	1,2,4-Trimethylbenzene Calibration

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	3839

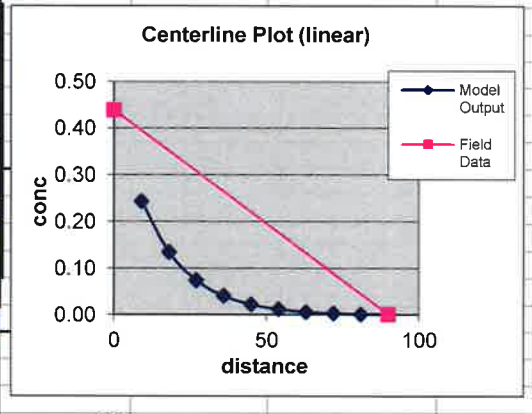
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

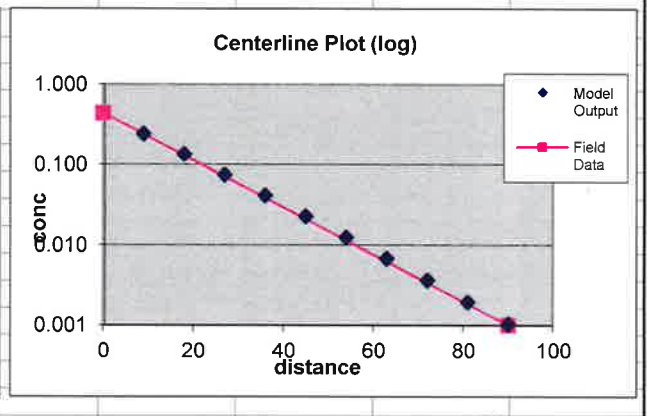
Point Concentration

x(ft)	y(ft)	z(ft)
90	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	90	6	0
at	3839	days =	
			0.001 mg/l

AREAL MODEL	CALCULATION DOMAIN
Length (ft)	90
Width (ft)	40





	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.006	0.003	0.002	0.001	0.001
0	0.244	0.136	0.075	0.042	0.023	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.006	0.003	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data:	**Centerline C Concentration**			0.44	0.001					
	Distance from Source			0	90					

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project: Vennard's
Date: 11/3/2016 Prepared by: Mary Feerrar
Contaminant: 1,2,4-Trimethylbenzene 5 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation

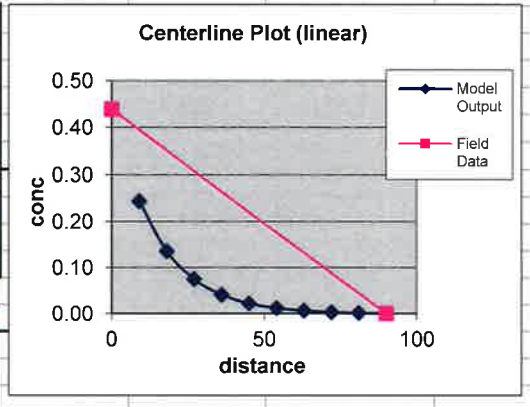
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	5665

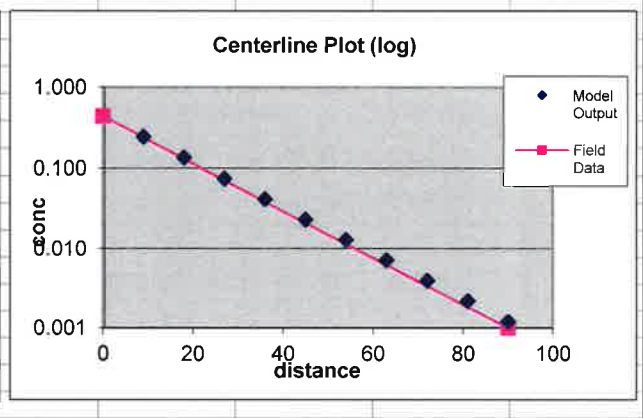
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

Point Concentration

x(ft)	y(ft)	z(ft)
52	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	52	6	0
at	5665	days =	0.015 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	90
Width (ft)	40

	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
0	0.245	0.136	0.076	0.042	0.023	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:			
Centerline C Concentration	0.44	0.001	
Distance from Source	0	90	

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	1,2,4-Trimethylbenzene 10 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

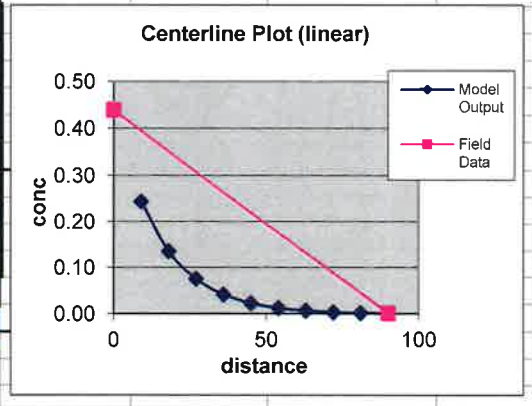
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	7491

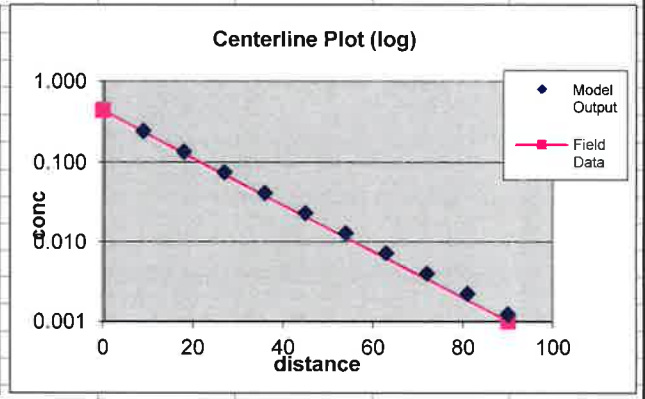
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

Point Concentration

x(ft)	y(ft)	z(ft)
52	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	52	6	0
at	7491	days =	
			0.015 mg/l





	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	90
	Width (ft)	40

	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
0	0.245	0.136	0.076	0.042	0.024	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:									
	Centerline C Concentration	0.44	0.001						
	Distance from Source	0	90						

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	1,2,4-Trimethylbenzene 15 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation

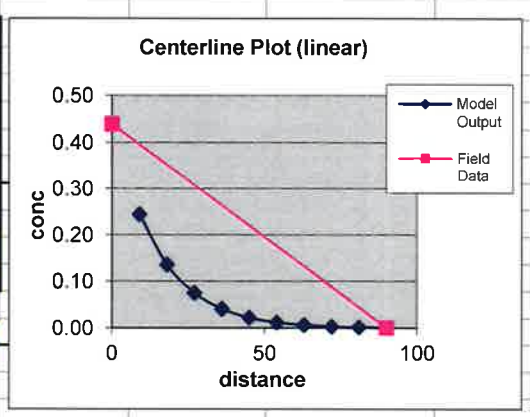
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	9317

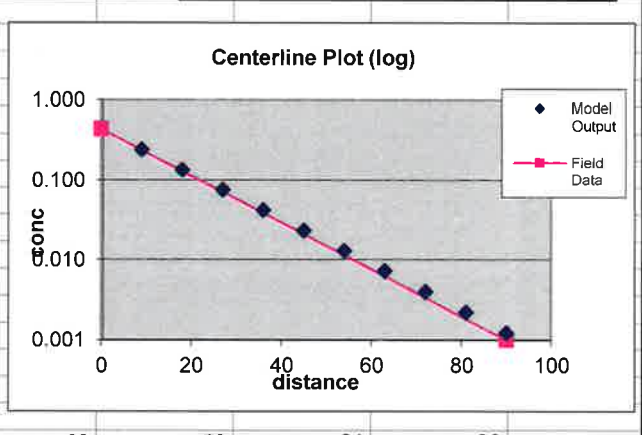
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

Point Concentration

x(ft)	y(ft)	z(ft)
52	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	52	6	0
at	9317	days =	0.015 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	90
Width (ft)	40

	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
0	0.245	0.136	0.076	0.042	0.024	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:			
Centerline C Concentration	0.44	0.001	
Distance from Source	0	90	

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	1,2,4-Trimethylbenzene 20 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

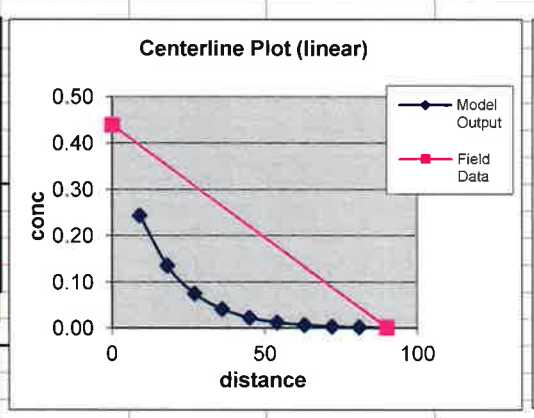
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	11144

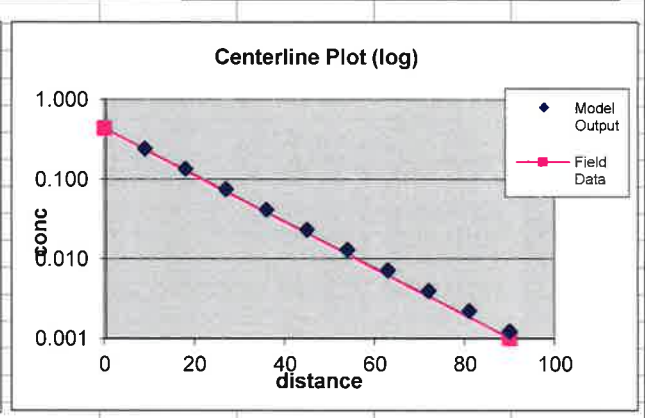
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

Point Concentration

x(ft)	y(ft)	z(ft)
52	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	52	6	0
at	11144	days =	
			0.015 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	90
Width (ft)	40

	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
0	0.245	0.136	0.076	0.042	0.024	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:			
Centerline C Concentration	0.44	0.001	
Distance from Source	0	90	

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	1,2,4-Trimethylbenzene 25 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES" P.A. Domenico (1987) Modified to Include Retardation

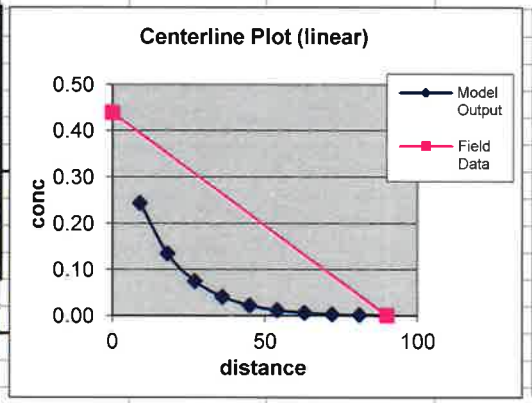
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	12970

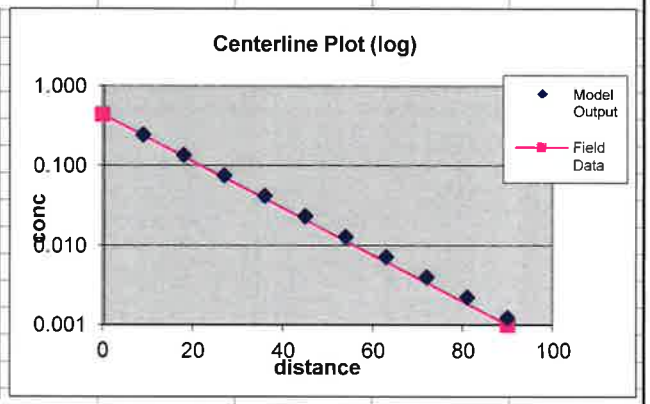
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

Point Concentration

x(ft)	y(ft)	z(ft)
52	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	52	6	0
at	12970	days =	
			0.015 mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	90
Width (ft)	40

	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
0	0.245	0.136	0.076	0.042	0.024	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:										
	Centerline C Concentration			0.44	0.001					
	Distance from Source			0	90					

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Vennard's		
Date:	11/3/2016	Prepared by:	Mary Feerrar
		Contaminant:	1,2,4-Trimethylbenzene 30 Year to MSC

NEW QUICK_DOMENICO.XLS

SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

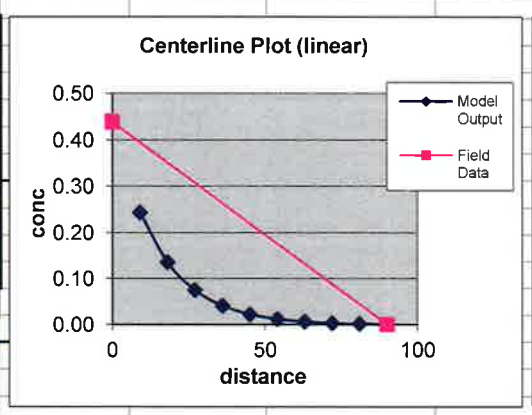
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.44	4.00E+02	4.00E-01	1.00E-03	0.00117	40	3	14796

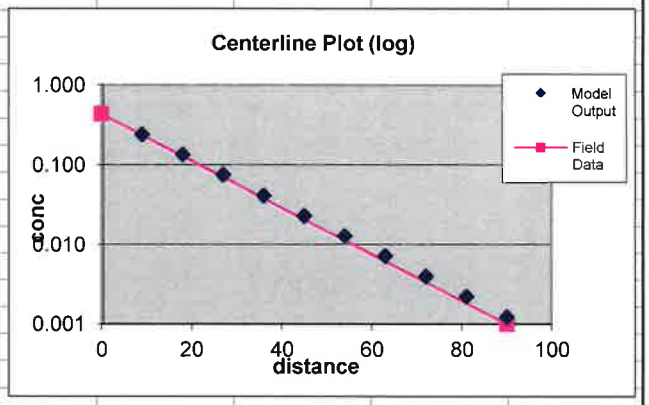
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
2.80E-01	0.021	0.39	1.6	2200	2.40E-03	22.66153846	0.000665309

Point Concentration

x(ft)	y(ft)	z(ft)
52	6	0

	x(ft)	y(ft)	z(ft)
Conc. At	52	6	0
at	14796	days =	
			0.015
			mg/l





AREAL MODEL	CALCULATION DOMAIN
Length (ft)	90
Width (ft)	40

	9	18	27	36	45	54	63	72	81	90
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
0	0.245	0.136	0.076	0.042	0.024	0.013	0.007	0.004	0.002	0.001
-20	0.122	0.068	0.038	0.021	0.012	0.007	0.004	0.002	0.001	0.001
-40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data:	**Centerline C Concentration**			0.44	0.001					
	Distance from Source			0	90					

APPENDIX Q

PNDI RECEIPT AND WETLANDS MAP

1. PROJECT INFORMATION

Project Name: **Vennard's**
Date of Review: **11/3/2016 01:18:53 PM**
Project Category: **Hazardous Waste Clean-up, Site Remediation, and Reclamation, Spill (e.g., oil, chemical)**
Project Area: **0.65 acres**
County(s): **Indiana**
Township/Municipality(s): **WHITE**
ZIP Code: **15701**
Quadrangle Name(s): **INDIANA**
Watersheds HUC 8: **Conemaugh**
Watersheds HUC 12: **Yellow Creek Lake-Yellow Creek**
Decimal Degrees: **40.575912, -79.133157**
Degrees Minutes Seconds: **40° 34' 33.2821" N, 79° 7' 59.3668" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

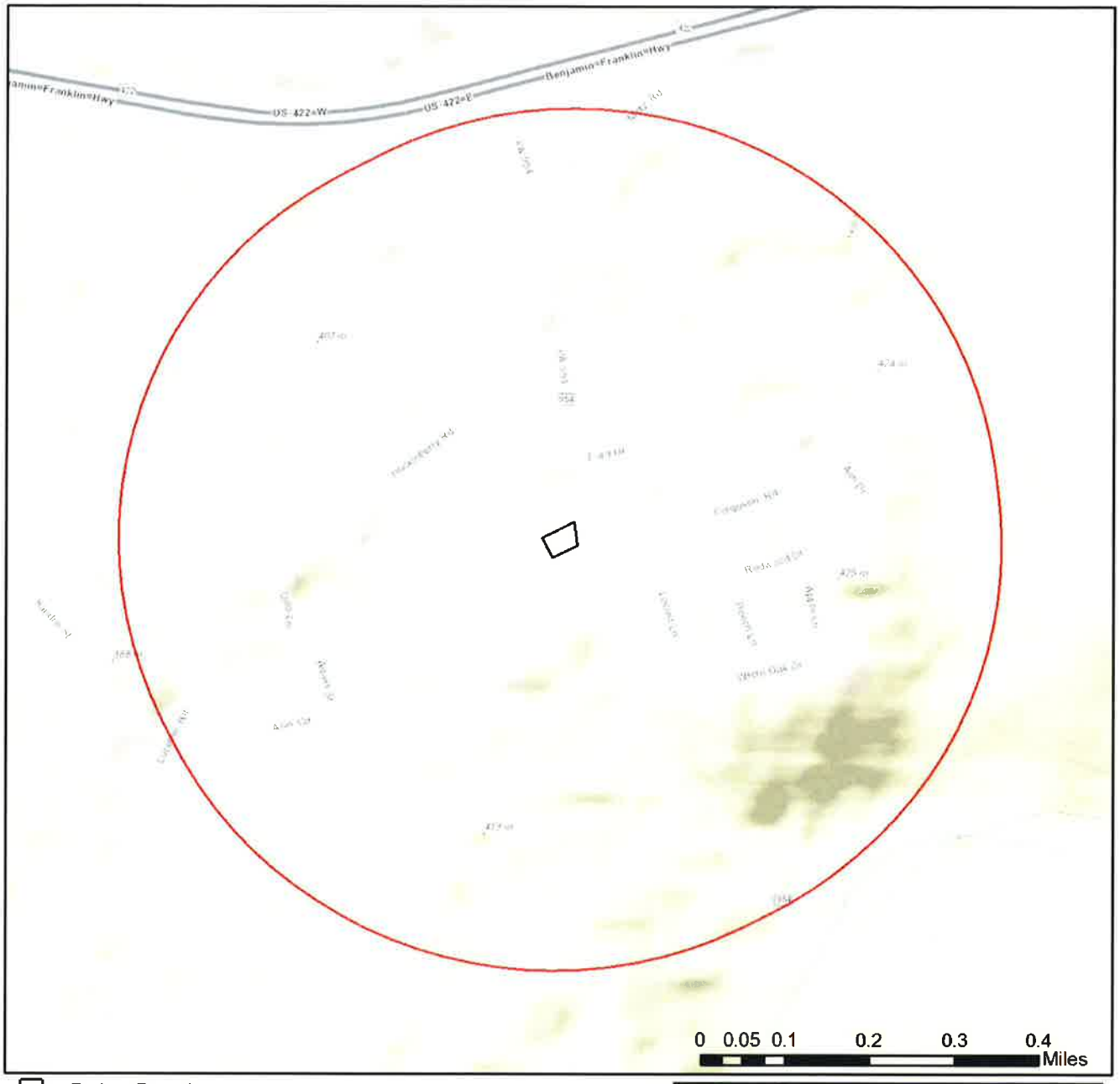
Vennard's

Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user

Vennard's



Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Michael E. Kern, P.G.
Company/Business Name: Mountain Research, LLC
Address: 825 25th Street
City, State, Zip: Altoona, PA 16601
Phone: (814) 949-2034, Ext. 251 Fax: (814) 949-9591
Email: mkern@mountainresearch.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Michael Kern
applicant/project proponent signature

11/11/2016
date

Wetlands Mapper Search Conducted 11/8/2016