Groundwater Remediation Project Summary Report

Pascoag, Rhode Island

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Prepared for:

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Office of Waste Management
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1.0 INTRODUCTION

On behalf of Rhode Island Department of Environmental Management (RIDEM), BETA Group, Inc. (BETA) has prepared this report summarizing all efforts that have been taken to remediate the subsurface release of gasoline that occurred in the Village of Pascoag, Rhode Island in 2001. From 2001 through 2006, RIDEM and several specialized consultants performed the initial investigation of the release, extensive subsurface characterization of the impacted area, and initial remediation actions related to soil and groundwater. BETA was retained by RIDEM in 2008 to implement a new phase of groundwater remediation and to monitor concentrations of the contaminants of concern throughout the impacted area.

2.0 PROJECT BACKGROUND

On September 2, 2001, methyl tertiary-butyl ether (MTBE), a constituent of gasoline, was discovered in the public drinking water well (PW-3A) in Pascoag, Rhode Island. The concentration of MTBE in the public well was above 400 µg/l when the contamination was discovered and subsequently increased to over 800 µg/l. Other gasoline constituents including benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) were also detected. Immediately after the contamination was discovered, bottled water was delivered to the residents of Pascoag for consumptive purposes, and a carbon filtration system was connected to the public well to provide water suitable for bathing through the distribution system. On January 11, 2002, PW-3A was decommissioned and Pascoag's water distribution system was connected to the nearby Village of Harrisville's water supply to provide the residents of Pascoag with clean potable water. This report summarizes the remedial actions that have been conducted since the discovery of the release in September of 2001 and their impact on groundwater conditions.

3.0 SOURCE AREA DESCRIPTION

The source of the gasoline release was determined to be the former North Main Street Mobil located at 24 North Main Street (**Source Area**). Refer to Figure 1 for a site plan of the source area. While a leaking underground storage tank (UST) containing MTBE within the source area was not inconclusive, the extremely high levels of MTBE at Source Area implicate North Main Street Mobil as the source of the release. Soon after the discovery of the contamination, RIDEM took over investigation and remediation of the release.

The Source Area had been used as a gasoline fueling and automobile service station. At the time of the release, there were five active underground storage tanks (USTs) on the property: three gasoline USTs; one diesel UST and one No. 2 fuel oil UST. An additional abandoned gasoline UST was found later during site investigations. Six USTs were removed from the Source Area as part of the remediation along with approximately 1,000 cubic yards of gasoline contaminated soil. Laboratory testing of groundwater from the Source Area found concentration of gasoline constituents, MTBE, benzene, toluene, ethylbenzene, and xylenes, well above their respective RIDEM GAA Groundwater Standards. In addition, free product was field measured in several monitoring wells within and proximate to the Source Area.

4.0 SITE DESCRIPTION

The extent of the release was exacerbated by Pascoag's drinking water well, which drew the contaminants approximately 1,500 feet in a northerly direction from the Source Area across an area covering approximately 20 acres (**the Site**). Since the area impacted was fairly extensive, RIDEM divided it into four distinct study areas (refer Figure 2: Site Plan) that are defined as follows.

Area 1:
Area 1 consists of the Source Area at 24 North Main Street and the southern portion of the Bradford Court Apartments. This was the first area targeted by RIDEM for remediation. Area 1 was the most highly impacted section of the Site when the contamination was discovered in 2001. Free petroleum product and MTBE concentrations above 100,000 µg/l were detected in several monitoring wells. Bedrock in this area is relatively shallow at 5-10 feet below grade.

Area 2
Area 2 consists of the remainder of Bradford Court Apartments, portions of North Main Street, and the property surrounding Herald Square Shops at the west side of North Main Street, due north of Area 1. Concentrations of MTBE reached 270,000 µg/l in bedrock well LE-7 in November of 2001. Bedrock in this area is relatively shallow at 5-10 feet below grade.

Area 3
Area 3 consists of the region to the east of North Main Street and north of Area 2, extending to public well PW-3A. The monitoring wells in this area initially contained relatively low levels of MTBE and other BTEX compounds but increased over time. In 2005, MTBE concentrations in several monitoring wells were above 2,000 µg/l. Bedrock in this area is relatively deep at approximately 55 feet below grade.

Area 4
Area 4 lies to the east and west of Summer Street and Shea Lane. MTBE and BTEX levels have remained elevated in the southern section of this area. This area used to contain several textile mill buildings that operated in the early to mid-1900s. Bedrock in this area drops off to a depth of 30-feet, compared to the bedrock encountered near the source at a depth of 20-feet.

Current property usage throughout the Site consists of a mix of both residential and commercial uses. The Pascoag River flows along the western border of the Site.

4.1 Historical Property Use

The former North Main Street Mobil and the abutting Herald Square Shops located to the north were formerly the location of a textile mill that operated until the 1960's. The Bradford Court Apartments located east of the source was formerly a railroad station. Railroad tracks ran through the Site and crossed the Pascoag River somewhere between MW-58 and MW-28 (refer to Figure 1). The mill was demolished sometime between 1962 and 1972, and the railroad was decommissioned sometime between 1972 and 1981.

4.2 Surficial and Bedrock Geology

Surficial Geology
Surficial deposits are heterogeneous and range from fine to coarse glacial sand with some silt and gravel. The deposit is believed to be glacial deltaic in origin. Finer grained sediments including silt and well-sorted fine sands are common at depth. Closer to the surface poorly-sorted sand and gravel is more common. Well logs indicate a heterogeneous dense till layer near the base of the overburden throughout the Site. The bedrock interface is highly fractured creating a permeable surface for groundwater exchange between the overburden and bedrock.

In the immediate vicinity of the source, anthropogenic fill materials are common due to considerable textile mill activity during the last century. Based on the historic use of this area as a mill buried pipes, channels, and other subsurface features may also be present in this area.

Bedrock Geology

The bedrock in Areas 1, 2, 3, and 4 is composed primarily of augen granite gneiss. The rock is typically medium-to-coarse-grained with large feldspar porphyroclasts, and is generally variable in compositions (mostly quartz, feldspar, biotite, hornblende, and other accessory minerals). The second, less common rock unit is generally fine-to-medium-grained granite gneiss that lacks porphyroclasts, and is more quartz-rich than the augen granite gneiss. This unit forms a narrow gradational lens that extends from the south into the middle of the Site. Both rock units are typically massive, but display lineation and foliation that is locally very strong. Also, both units are highly fractured, especially at the bedrock/overburden interface (Hermes et al., 1995; Quinn, 1967). A bedrock contour map is provided as Figure 3.

4.3 Groundwater Classification

The groundwater classification in the project area, as determined by RIDEM Office of Water Resources, is GAA. The GAA classification applies to areas where RIDEM considers groundwater to be suitable for public or private drinking water use without prior treatment and located in either a groundwater reservoir, recharge area or a wellhead protection area. Based on RIDEM Groundwater Protection and Wellhead Protection Area Map, the Site is located in a community wellhead protection area.

Accordingly, RIDEM GAA Groundwater Standards for the BTEX compounds and MTBE are as follows:

Benzene:	5 µg/l
Toluene:	1,000 µg/l
Ethylbenzene:	700 µg/l
Xylenes (total):	10,000 µg/l
MTBE:	40 µg/l

4.4 Hydraulic Conductivity

RIDEM and Zebra Environmental studied the hydraulic properties of the Site using Geoprobe™ Direct Sensing Technology during March of 2006. A hydraulic profiling tool (HPT) was used to determine the hydraulic conductivity of the soils at the Site. As the HPT is driven into the subsurface, water is pumped through a screen in the tool. Resistance to water flow through the screen can be used to determine the hydraulic conductivity of the soil. In addition, the HPT is equipped with an electrical conductivity dipole that measures soil electrical conductivity. In this particular study, two different flow rates were used in order to maximize the hydraulic conductivity measurements of the coarse sands present on Site: 200 mL/min and 400 mL/min. Results of the thirteen HPT borings are provided in Appendix A.1.

Slug tests were also performed on 23 monitoring wells throughout the Site using the Bouwer Rice Slug Testing method. The drawdown from the slug tests was measured using Mini Troll transducers from In-Situ, Inc. Both slugs of water and solid slugs constructed of PVC pipe were used for the tests. The following wells were slug tested in order to determine their saturated hydraulic conductivity (K_{sat}): LE-1, AE-6BR, MW-14S, MW-14D, LE-15S, LE-15M, LE-15DBR, MW-18, MW-18D, MW-28D, MW-28BR, MW-29, MW-30S, MW-30D, MW-32S,

MW-32D, MW-33BR, MW-42D, MW-44, MW-45S, MW-45D, MW-58D. The Bouwer Rice calculations were completed in a Microsoft Excel based program created by the United States Geologic Survey (USGS). The hydraulic conductivity was determined to vary from 0.0207 feet per day in MW-15D to 94.148 feet per day in MW-15S. A table presenting results of the slug testing is provided in Appendix A.2.

4.5 Environmental Receptors

The primary environmental receptors in the vicinity of the Site are Public Well 3A and the Pascoag River.

Public Well-3A

Public Well-3A was installed in September 1999 and its construction consists of an outer diameter of 16 inches extending 64 feet below grade with seven feet of screen within the bedrock. Bedrock was encountered at 54.5 feet below grade. The construction log and other reports on the public well are provided in Appendix B. PW-3A was typically pumped from 8-12 hours per day depending on water demand at a rate of 530 gallons per minute. After the concentrations of MTBE in PW-3A exceeded 1,000 µg/l, the well was shut down. It is unclear from the well construction diagram whether or not PW-3A is screened into the overburden or not. However, it is probable that PW-3A was drawing water from both the overburden soils and bedrock fractures.

Three pump tests were conducted on the PW-3A: one in 2003, one in 2004, and one in 2005. The continuous (24 hour) pumping rates for each of these tests were chosen to mimic PW-3A's average pumping schedule for drinking water before the contamination was discovered.

A long-term pump test was conducted on PW-3A from September through October of 2003. PW-3A was pumped continuously at the rate of 146 gallons per minute. Pumped groundwater was run through a granular activated carbon filtration system before being discharged into the Clear River north of the pumping station. Samples were collected and analyzed for BTEX, MTBE, Tert-butyl alcohol (TBA) and other gasoline oxygenates. MTBE concentrations reached 83 µg/l and TBA reached 381 µg/l.

RIDEM conducted a second pump test in September of 2004. PW-3A was pumped continuously at the rate of 177 gallons per minute for 60 days. The maximum concentration of MTBE detected during this test was 17 µg/l.

RIDEM conducted the third pump test in 2005 with the cooperation of the Pascoag Utility District and the University of Rhode Island's Department of Geosciences. The pump test lasted 36 days from March 14 through April 20. PW-3A was pumped initially at the rate of 240 GPM and the MTBE concentration reached 43 µg/l. The pumping rate was decreased to 150 GPM on April 19, which resulted in a decrease in the MTBE concentration to 35 µg/l.

Pascoag River:

The Pascoag River, which flows due north, forms the western border of the Site. During the winter months, flow in the Pascoag River is dominated by water released from the Pascoag Reservoir. However, summer flow is dominated by base flow since the Pascoag Reservoir Dam is closed.

The following monitoring wells were installed into the Pascoag River bed in order to sample the groundwater below the river: MW-47, MW-48, MW-49, MW-50, MW-51, MW-52 and MW-63R. These wells have a one-foot screen that is hand-driven 3 feet into the riverbed. The PVC river bed wells were replaced with mill-slotted steel wells in the summer of 2006. The new wells were given the suffix 'R' at the end of the label to help distinguish the river bed wells from the other shallow monitoring wells throughout the Site. These wells also have a one-foot screen that is hand-driven 3 feet into the riverbed.

In addition to sampling the groundwater in the riverbed, surface water samples of the Pascoag River have been collected at each river well location. Neither the US-EPA nor the State of Rhode Island has a surface water standard for MTBE. The MTBE concentrations under the Pascoag River bed at MW-50R reached approximately 18,000 µg/l in July of 2004.

Four surface water samples have been periodically collected at locations along the Pascoag and Clear Rivers. These locations include Sayles Avenue, Summer Street, Union Avenue, Railroad Avenue, River Street, and Eccleston Field. Sayles Avenue is up-gradient of the Site, Summer Street is located within the Site, and Union Avenue, and River Street are located down-gradient of the Site. Surface water samples collected in 2005 at each of the locations had MTBE at levels below RIDEM GAA Standards. No volatile organic compounds were reported above laboratory detection limits in surface water samples collected in January 2012.

5.0 SITE ASSESSMENT

Groundwater Assessment

From 2001 through 2006, a total of ninety one (91) monitoring wells were installed at the Site to facilitate mapping the vertical and lateral extent of the contamination. There were forty-two (42) shallow wells, nine (9) medium wells, fifteen (15) deep wells, fifteen (15) bedrock wells, and ten (10) river bed wells installed across the Site. In addition to the monitoring wells, eight (8) soil vapor wells, nine (9) groundwater recovery wells, and fifteen (15) monitoring wells around PW-3A were installed. The wells are described as follows:

- Bedrock wells were drilled into the bedrock until there was evidence that the first water-bearing fracture had been reached. Bedrock wells are open boreholes that use steel casing to seal off the overburden to ensure that only the groundwater derived from the bedrock fractures is being sampled. Bedrock wells are labeled with a "BR" suffix.
- Deep wells were drilled until reaching refusal at the bedrock/overburden interface. Deep wells have five feet of screen that terminates above the inferred bedrock/overburden interface and are labeled with a "D" suffix.
- Shallow wells were installed to straddle the surface of the water-table. Shallow wells are labeled with an "S" suffix or with no suffix.
- Medium wells were installed at an intermediate depth between a shallow and a deep well. Medium wells are labeled with a "M" suffix.
- River wells are shallow wells with a one foot screen that were hand driven 3 feet into the Pascoag River bed to sample the groundwater beneath the river. River wells are labeled with a "R" suffix.
- Vapor wells are shallow wells that were installed to sample the soil gas for VOCs. These wells are constructed of nylon tubing with a sparging stone attached to the end of the tubing. They are set approximately 12 inches above the water table. Soil vapor wells are labeled with a "VP" suffix.
- Groundwater recovery wells were pumped as part of the groundwater pump-and-treat system. Groundwater recovery wells are labeled with a "RW" suffix.
- Monitoring wells were installed around the public well during the drilling of PW-3. These wells were given a single letter designation (i.e. Well "A").

Prior to sampling a minimum of three well volumes are purged from each well. Bedrock wells are purged with a submersible pump, while shallow, medium, and deep monitoring wells are usually purged with a peristaltic pump or a bailer. Purge water from the wells is collected in drums and pumped through the onsite carbon filtration system. Monitoring wells are gauged with an Interface Probe (IP) to determine the depth to groundwater and check for the presence of free product. The water table measurement is subsequently corrected using top of casing (TOC) data, which has been surveyed to an assumed datum. A groundwater contour map is provided as Figure 4.

Monitoring wells are sampled for VOCs using the EPA Method 8260B with oxygenates. Samples are collected with dedicated bailers and slowly transferred into glass vials preserved with hydrochloric acid.

Results from the groundwater sampling program are discussed in Section 5.0.

Soil Vapor Intrusion Assessment

In response to reports of petroleum odors RIDEM conducted a soil vapor intrusion assessment. During the initial site assessment conducted in 2001, volatile vapors were found to be present in three residential buildings. On September 28, 2001 volatile vapors measured at 92 North Main Street were between two to three parts per million (ppm) in a sump pump pit located in the basement. The sump pump pit was subsequently filled and subsequent testing indicated that volatile vapors were not present. Volatile vapors were also measured at Bradford Manor at concentrations between two to three ppm on November 13, 2001. Subsequent testing indicated that elevated volatile vapor concentrations were not present at Bradford Manor after the initial reading. Volatile vapors were detected at 99 North Main Street at concentrations between two to three ppm and a vapor recovery system was placed into operation until it was removed by the property owner in April of 2002.

A soil vapor intrusion assessment was performed in 2006 and involved the installation and sampling of eight soil vapor wells: VP-4, VP-5, VP-21, VP-22, VP-25, VP-26, VP-27 and VP-60 as shown in Figure 5. The assessment was performed using protocol developed by the United States Environmental Protection Agency (EPA). The boreholes for the vapor wells were drilled using a Geoprobe™ 6601DT drilling unit. A sparging stone was placed on the end of nylon tubing and placed down the borehole approximately 1-2 feet above the water table. The borehole was filled with clean sand and sealed with Bentonite approximately 12 inches below the surface. The soil vapor wells were then capped with clean sand and covered with road boxes. For sampling, a minimum of three well volumes was purged out of each soil vapor well before the samples were collected in tedlar bags. The samples were then sent off to be analyzed using EPA method 8260B. No significant VOC concentrations were noted during this study. The analytical results for the soil vapor intrusion study are provided in Appendix C.

6.0 HISTORICAL REMEDIAL ACTIONS

This section discusses remedial actions that were completed by RIDEM following the discovery of the release in 2000 through 2006. Table 1 below notes a 1,000-gallon kerosene UST was removed in November of 1998 but no evidence of a release was noted at that time. This work was completed in several phases as described below:

- *Initial Site Investigation*: During the initial investigation in September of 2001, vacuum trucks and recovery well pumps were installed and used to remove free product that was found in Area 1.

- *Pilot SVE System*: In November of 2001, a pilot soil vapor extraction system (SVE) was installed in Area 1 to remove the contaminated soil vapors close to the source area.

- *First UST Closure*: In December of 2001, an abandoned 2,000 gallon gasoline UST was removed from Area 1. The removal report noted the presence of a hole in the tank and evidence of a release. Approximately 800 tons of gasoline contaminated soil were removed during the closure of this tank.

- *Phase I Remediation*: In December 2001, a full scale soil vapor extraction (SVE) and groundwater pump and treat system was installed in Area 1 to continually treat contaminated soil and groundwater near the source. Soil vapor was collected from five points, volatile vapors were removed with a catalytic oxidizer and vapor phase carbon, and then discharged to the atmosphere. Groundwater was pumped from both overburden and bedrock wells, into an air stripping tower, through granular activated carbon, and discharged to the Pascoag River. Volatile vapors from the air stripping tower were removed with vapor phase carbon before being discharged to the atmosphere.

- *Emergency Filtration System:* An emergency carbon filtration system was connected to public well PW-3A in November of 2001 to remove contaminants that allowed the water supply to be used for bathing. This process continued until PW-3A was shut down on January 11, 2002

- *Second UST Closure:* In June 2002, the four underground storage tanks previously used to dispense gasoline and diesel fuel at 24 North Main Street were removed along with the kiosk, canopy, tank pad, dispensers and all other UST system components. While no evidence of holes were noted in the USTs, approximately 1,000 cubic yards of heavily contaminated soil was excavated, removed and properly disposed during removal operations.

- *Phase II Remediation:* During the winter of 2002-2003, a second phase of remediation was initiated to remediate the area between the source and Herald Square Shops located directly to the north. The expansion of the existing groundwater pump-and-treat system involved installing two additional bedrock recovery wells (RW-6 and RW-9).

- *Phase III Remediation:* The third phase of remediation, which was performed in the fall of 2005, involved expanding the SVE system to remove impacted soil gas from the Herald Square Shops parking lot.

Table 1: Underground Storage Tanks Removed at the Source Area

Tank Number	Volume (gallons)	Contents	Date Removed	Condition
1	6,000	Gasoline	6/12-13/2002	No hole or leak noted
2	6,000	Gasoline	6/12-13/2002	No hole or leak noted
3	6,000	Gasoline	6/12-13/2002	No hole or leak noted
4	500	No. 2 Oil	7/27/2004	No hole or leak noted
5	1,000	Kerosene	11/9/1998	No hole or leak noted
6	6,000	Diesel	6/12-13/2002	No hole or leak noted
7	2,000	Gasoline	12/19/2001	Found Abandoned; Hole and leak noted

At the time the above remedial actions were terminated in 2006, approximately 6,000,000 gallons of contaminated groundwater had been treated and over 3,000 equivalent gallons of gasoline had been removed from the Site.

7.0 CURRENT REMEDIAL ACTIONS

BETA was retained by RIDEM in June 2008 to perform a new phase of groundwater remediation focusing on an area behind the Herald Square Shops in the south central section of Area 4. Historically, groundwater in this region has exhibited some of the highest concentrations of benzene, MTBE and other contaminants of concern. Initially, a performance-based bid was proposed by RIDEM for the project but due to high projected costs, a phase-based approach was implemented. Services provided by BETA and their impacts on the environmental condition in Area 4 are discussed in the following sections of this report.

7.1 Area 4 Groundwater Treatment System

In October 2009, a new groundwater pump and treatment system was placed into operation to assist in the remediation of the former gasoline release. The treatment system, which was designed to treat a maximum of 40 gallons per minute, originally included two (2) new 6-inch diameter recovery/extraction wells, identified as BETA-1 and BETA-2, from which groundwater is pumped. BETA-1 and BETA-2 were drilled to depths of 32 feet and 28 feet below ground surface, respectively and each extend 10 feet into bedrock. These wells are located at the eastern side of the Pascoag River and convey groundwater to a trailer-mounted activated carbon adsorption system. The locations of these two extraction wells are shown in Figure 1 and well logs are provided in Appendix D.1.

Influent water to the treatment system originates from electric submersible pumps installed in wells BETA-1 and BETA-2. The pumps operate off conductance type level probes in each well. The discharge from each pump exits the well through a pitless adapter and connects to independent underground 2-inch schedule 80 PVC piping. The two piping runs then enter the trailer. Piping located above-ground outdoors is heat traced and insulated to prevent freezing during the winter months.

Inside the trailer, flow from each well is recorded on independent 1-½ inch diameter mechanical flow meter/totalizers. A gate valve is provided downstream of each flow meter to allow for manual control of the flow rate from each well. The flow rate is adjusted so that the pumping rate closely coincides with the well recharge rate. This limits the number of start/stops of the submersible pumps. The two piping runs then combine in a common header before discharging to a 250 gallon polyethylene equalization tank. The equalization tank contains three float switches that control the starting and stopping of a transfer pump and deactivate both well pumps on a high level alarm condition. The transfer pump conveys water to two 25-micron bag filters installed in a parallel configuration and then through two 2,000 pound liquid phase carbon adsorption vessels that are installed in series. The series configuration protects the discharge and allows the primary vessel to be alternated. Once contaminant breakthrough is detected in the primary vessel, its carbon is changed and it is then placed in the secondary position. Coconut shell based carbon is being used for its stronger affinity toward MTBE. Following the secondary carbon vessel, water is routed through a 2-inch flow meter/totalizer to accurately measure the volume discharged to the Town of Burrillville wastewater collection system. A treatment system layout diagram and a process schematic are included as Appendices D.2 and D.3, respectively.

Equipment specification data sheets are included in Appendix D.4.

The two well pumps, the transfer pump and the electric heater can be operated independently from panel mounted switches on a central control cabinet located inside the trailer. The switches provide hand/off /auto controls for the operator to utilize during operations. With the switches in the AUTO position, the well pumps are controlled by the conductance probes in the wells. In the HAND position the pumps are activated. Similarly, with the switch for the transfer pump in the AUTO position, the pump is controlled by the float switches in the equalization tank. In HAND position, the pump is activated. The heater in the trailer is controlled from a temperature setting on a thermostat with the switch in the AUTO position and is manually activated with the switch in the HAND position. All equipment should be left in the AUTO position during normal operations.

The treatment system discharges to a sewer manhole located on Summer Street. A discharge permit for up to 25,000 gallons per day (gpd) of treated groundwater was initially granted by the Burrillville Sewer Commission (BSC). At the request of RIDEM, the permitted flow was later reduced to 12,500 gpd due to lower than anticipated groundwater recharge rates.

7.1.1 Treatment System Modifications

Groundwater sampling results indicate that higher contaminant concentrations exist in the deeper wells and in the bedrock layer. In June of 2012 two bedrock wells, MW-28BR and MW58BR, were converted to extraction wells to increase the volume of groundwater being treated and possibly draw trapped gasoline from the bedrock. MW-58BR is a new well situated approximately 25 feet east of BETA-1 and is drilled to a depth of 65 feet below ground surface and 34 feet into bedrock. MW-28BR was an original well installed by RIDEM. It is drilled to a depth of 60 feet below ground surface and 30 feet into bedrock.

Prior to installing the pumps, pumping tests were conducted and it was determined that each well could potentially yield 2 gpm. Water level readings taken during the pump tests at nearby or adjacent overburden wells indicate that there was no connectivity between the overburden and bedrock wells as there was no fluctuation in groundwater levels. Since being placed into service, the two new wells combined yield approximately 2.5 gpm.

Groundwater is currently being pumped continuously from the four remedial wells (BETA-1, BETA-2, MW-58BR and MW-28BR) at a combined rate of 4 to 6 gpm.

7.2 System Sampling and Monitoring

Bi-weekly Sampling of Treatment System

Effluent from the groundwater treatment system discharges to the Town of Burrillville's wastewater collection system. The agreement between the BSC and RIDEM requires that the effluent be sampled on a bi-weekly basis so that the prolonged discharge of specific pollutants of concern is prevented. In addition, midfluent samples (after the primary activated carbon vessel) are also collected on a bi-weekly basis to monitor for pollutant breakthrough from the primary vessel. Breakthrough triggers the replacement of the activated carbon in the primary vessel. Midfluent and effluent samples are analyzed for VOCs by EPA Method 8260. Upon receipt of the analytical data, a letter report is issued to the BSC that states the volume of treated groundwater discharged, and summarizes the analytical results.

To date, approximately 6.5 million gallons of groundwater have been pumped and treated through the system. Over time, the rate of groundwater withdrawal has dropped from over 10,000 gpd during the initial months of operation to its present rate at approximately 4,000 gpd. A summary of the volume of groundwater pumped by sampling period is included in Appendix E.

Bi-weekly sampling results of the treatment system have yielded no violations. However, low concentrations of tert-butyl alcohol (TBA) have intermittently been detected in the midfluent and effluent samples. TBA is a biodegradable breakdown product of MTBE that is not readily adsorbed onto activated carbon. It has no adverse impact on the treatment process at the Burrillville WWTF. Based on the bi-weekly sampling results, the existing treatment system has been removing the contaminants of concern, as designed.

Quarterly Groundwater Sampling

To assess the effectiveness of the remediation program, nine existing groundwater monitoring wells in the vicinity of extraction wells BETA-1 and BETA-2 have been sampled on a quarterly basis. These wells were previously identified by RIDEM as MW-18S, MW-18D, MW-28S, MW-28D, MW-45D, MW-49R, MW-58S, MW-58D and MW-59D. Samples are collected using low flow sampling techniques and laboratory analyzed for VOCs by EPA Method 8260. In addition, the groundwater elevation in each well is gauged so the impacts of seasonal water table fluctuations on contaminant concentrations can be assessed. One composite sample of the influent to the treatment system is also collected and analyzed on a quarterly basis to evaluate changes in conditions.

The first round of quarterly samples collected by BETA occurred on October 3, 2009, just prior to the activation of the treatment system. Before that, samples had not been collected in the project area since October 2006. As shown in the table of quarterly groundwater sampling data presented in Appendix F.1, in most instances contaminant concentrations dropped significantly from October 2006 to October 2009. This was likely due to the effectiveness of prior remedial efforts, natural attenuation and possible pollutant migration. Table 2 identifies contaminants that were detected at concentrations above their respective GAA Groundwater Standards during the October 2006, October 2009 and the recent May, August, and December 2012 sampling events.

The most recent data indicates that benzene, MTBE, naphthalene, and ethyl-benzene are still detected in some of the sampled wells. However, contaminant concentrations have trended downward and are currently below their respective GAA Groundwater Standards in these selected wells, as indicated by the December 2012 sampling results in Table 2. Graphs trending contaminant concentrations in these nine wells are presented in Appendix F.2.

7.3 Carbon Change-outs

Carbon change-out occurs when contaminant breakthrough is detected in the midpoint sample for more than one sampling period. Change-outs consist of replacing the spent carbon with fresh, regenerated coconut shell based carbon. Original estimates based on the expected flow through the treatment system and pollutant concentrations, indicated that one carbon vessel (2,000 pounds) would need to be changed out per quarter. However, due to reduced flows through the system, change-outs have been required less frequently. Carbon was changed out on the following dates: February 22, 2010, August 5, 2010, and February 1, 2012. Spent carbon was classified as non-hazardous and transported to an appropriate recycling facility. Contaminant breakthrough of the primary vessel was also recently detected in February 2013. RIDEM is presently deciding whether to continue operating the pump and treat system. Once that determination is made, the primary vessel will be changed out if operation will continue or the carbon from both vessels will be removed and properly disposed if operations are to cease.

History indicates that there is sufficient life in the secondary vessel for two to three months of months of operation before contaminant breakthrough is detected.

Table 2: Contaminants at Concentrations Above GAA Groundwater Standard Proximate to Treatment Area

Well	Sampling Event				
	October 2006	**October 2009**	**May 2012**	**August 2012**	**December 2012**
MW-18S	Benzene (150) MTBE (3,600)	MTBE (200)	--------	--------	--------
MW-18D	Benzene (400) Ethylbenzene (800) Naphthalene (190) MTBE(5,500)	Benzene (41) MTBE (600) Naphthalene (52)	--------	--------	--------
MW-28S	MTBE (950)	--------	--------	--------	--------
MW-28D	Benzene (360) Ethylbenzene (1,600) Naphthalene (240) MTBE (1,100) Toluene (1,700)	Benzene (68) Ethylbenzene (760) Naphthalene (130) MTBE (190)	Benzene (13) MTBE (53) Naphthalene (54)	Benzene (10 Naphthalene (44)	--------
MW-45D	Benzene (320) Naphthalene(160) MTBE (1,600)	Benzene (65) MTBE (200) Naphthalene (93)	--------	--------	--------
MW-49R	Benzene (25) MTBE (260)	--------	NS	NS	NS
MW-58S	Benzene (1,800) Ethylbenzene (2,800) Naphthalene (4,500) MTBE (250) Toluene (12,000)	Benzene (360) Ethylbenzene(1,400) Naphthalene (460) MTBE (590)	--------	Benzene (38)	--------
MW-58D	Benzene (790) Ethylbenzene (2,900) Naphthalene (290) MTBE (1,600) Toluene (9,200)	Benzene (190) Ethylbenzene (1,700) Naphthalene (480) MTBE (330) Toluene (4,300)	Benzene (78) Ethylbenzene(1,300) Naphthalene (210) MTBE (47)	Benzene (52) Ethylbenzene (1,100) Naphthalene (130) MTBE (45)	--------
MW-59D	MTBE (360)	--------	--------	--------	--------

NS – Not Sampled
----- No compounds detected at concentrations above the GAA Groundwater Standard
(290) – Contaminant concentration in µg/l

GAA Groundwater Standards:	Benzene:	5 µg/l
	Ethylbenzene:	700 µg/l
	MTBE:	40 µg/l
	Naphthalene:	100 µg/l
	Toluene:	1,000 µg/l

7.4 Routine Maintenance

Routine maintenance inspections are performed on a bi-weekly basis to optimize system performance and run time. During the inspections, BETA performs the following services:

- Maintain a log of the volume of groundwater pumped from well pumps BETA-1 and BETA-2, MW-28BR, and MW-58BR (refer to Appendix G).
- Maintain a log of the volume of treated groundwater discharged to the sewer system (refer to Appendix E).
- Determine the instantaneous flow rates from the four well pumps and adjust the flow rate to maximize pump run times and output.
- Record the pressure drop across the influent bag filters. Bags are replaced when the differential pressure across them approaches 10 psi (approximately 2 weeks of bag life at current flow rates).
- Remove iron scale from the floats in the equalization tank to ensure proper function.
- Test level floats and alarms to verify operation.

No significant repairs have been required and no major equipment items such as pumps, vessels and tanks have been replaced to date.

8.0 GROUNDWATER SAMPLING

Prior to BETA being retained in June 2008, RIDEM had installed over 100 monitoring wells throughout the Site at various depths. Before 2008, the last Site-wide sampling event (Areas 1 through 4) occurred in October 2006. In January 2012, RIDEM requested that BETA conduct an area-wide sampling event to determine if other regions within the Site still contain elevated contaminant concentrations. Fifty-one wells including six wells in the Pascoag River were sampled in Areas 2, 3 and 4. Some of the original wells could not be located or were found in an unserviceable condition. Prior to collecting groundwater samples, each well was purged of three well volumes of water using either a peristaltic pump or a submersible pump depending on well construction. Purge water was containerized and transported to the existing treatment system for processing.

One groundwater sample from each monitoring well was collected using a disposable polyethylene bailer and submitted to Con-Test Analytical Laboratory of East Longmeadow, Massachusetts for analysis of VOCs by USEPA Method 8260B. In addition, the groundwater elevation in each well was gauged so the impacts of seasonal water table fluctuations on groundwater quality could be assessed.

During the January 2012 sampling event numerous VOCs indicative of gasoline constituents were detected in most of the groundwater samples collected. However, the only analytes that were found at concentrations above their respective GAA Groundwater Standard were benzene, and MTBE (refer to Table 3). Benzene was above its GAA Groundwater Standard in wells MW-28D, MW-58D, MW-70BR, MW-70D, LE-16, MW-33BR and MW-58BR. MTBE was above its GAA Groundwater Standard in wells MW-15D, MW-28D, MW-28BR, LE-16, MW-33BR and MW-58BR.

At the request of RIDEM, nine (9) additional monitoring wells were installed to replace damaged wells and to allow further assessment of contaminant levels in the project area. New wells were installed by Technical Drilling Services, Inc., (TDS) under the supervision of BETA Group, Inc. from April 12-19, 2012, and included: MW-58BR, MW-59BR, MW-59D, MW-59M, MW-59S, MW-70BR, MW-71BR, MW-71D, and MW-17BR. Bedrock wells (BR designation) are 4-inch diameter steel cased and were advanced using an air hammer. Bedrock wells were drilled between 10 to 40 feet into bedrock. See

Appendix H.1 for the new bedrock well logs.

Over-burden wells are of conventional 2-inch diameter PVC construction and were installed with hollow stem augers. Five feet of 0.010-slot screen was placed at the appropriate depth. Overburden well logs are also included in Appendix H.1. The locations of these wells are shown in Figure 1. The construction logs for the existing monitoring wells are included in Appendix H.2.

A PID was used to periodically screen from the drill cuttings for the presence of gasoline constituents or other volatile compounds. Low-level concentrations were detected in the cuttings from wells MW-71BR and MW-71, which are located at the Source Area (Mobil Station property). PID readings of the cuttings from all other wells were at background concentrations.

The nine new wells were developed between April 25 and April 30, 2012. Effluent was containerized and transported to the existing treatment system for processing.

A second round of Site-wide sampling was conducted in April/May 2012. This round of sampling included selected wells in Area 1, the new wells installed in April 2012 and the other wells in Areas 2, 3 and 4 that were sampled in January 2012. River wells were not sampled. In all, 57 wells were sampled. Numerous VOCs indicative of gasoline constituents were detected in most of the groundwater samples collected. However, the only analytes that were found at concentrations above their respective GAA Groundwater Standard were benzene, MTBE, naphthalene, and ethyl-benzene (refer to Table 3). Naphthalene and ethyl-benzene were above their GAA Groundwater Standard in MW-58D during the May 2012 sampling event. Benzene was above its GAA Groundwater Standard in wells MW-28D, MW-58D, MW-70BR, MW-70D, LE-16, MW-33BR and MW-58BR. MTBE was above its Groundwater Standard in wells MW-15D, MW-28D, MW-28BR, MW-58D, LE-16, MW-33BR and MW-58BR.

The third and fourth rounds of site-wide sampling were completed in August and November/December 2012. These rounds of sampling consisted of the same wells that were sampled in April/May 2012 and one river well, MW-46R. Numerous VOCs indicative of gasoline constituents were again detected in most of the groundwater samples collected during both of these sampling events. However, the only analytes that were found at concentrations above their respective GAA Groundwater Standard were benzene, MTBE, naphthalene, and ethyl-benzene (refer to Table 3). The sampling results from August were consistent with the results from the April/May sampling event.

It should be noted that the groundwater from well MW-34BR had a visible sheen and a petroleum odor during each sampling event, although no analytes were detected above their GAA Groundwater Standard. Tabulated results from the total system sampling can be seen in Appendix I.

Analytical data from all groundwater samples indicates that the highest concentrations of contaminants lie deeper in the aquifer in a zone north of the Herald Square Shops and Bradford Manner and south of Grove Street (refer to Figure 1). This may indicate that some gasoline from the original release remains trapped in bedrock

8.1 GPS and Elevation Survey

The top of casing elevation at each monitoring well was surveyed to an assumed benchmark at MW-58S in January 2012. The top of casing elevation in the nine new wells were surveyed after their installation in May 2012. Casing elevations and related groundwater elevations are provided in Appendix J. A Trimble Geo XH GPS unit was used to locate all known wells in the project area on June 8, 2012 to create an updated map (see Figure 1).

Table 3: Summary of Groundwater Analytical Results for 2012

		Concentration (µg/l)			
Contaminant		**Benzene**	**MTBE**	**Ethyl benzene**	**Naphthalene**
GAA Groundwater Standard		5	40	700	100
Monitoring Well	**Sampling Date**				
LE-15D	1/9/2012	<1	**340**	<1	<10
	5/2/2012	<5	**440**	<5	<25
	8/13/2012	<5	**440**	<5	<10
	12/3/2012	<10	**970**	<10	<20
MW-28D	1/9/2012	**19**	**49**	510	<100
	4/30/2012	**13**	**53**	390	54
	8/9/2012	**10**	37	230	44
	11/29/2012	<1	6.4	5.9	<1
MW-28BR	1/10/2012	<2	**67**	<2	<20
	4/30/2012	<2	**110**	<2	<4
	8/14/2012	4.5	**220**	4.1	<8
	12/3/2012	10	**260**	38	<20
MW-58D	1/9/2012	**33**	19	330	<50
	5/4/2012	**78**	**47**	**1,300**	**210**
	8/9/2012	**52**	**45**	**1,100**	**130**
	11/29/2012	<1	5.6	16	5.3
MW-70BR	5/3/2012	**5.3**	1.4	97	31
	8/9/2012	**5.7**	3.4	150	35
	11/29/2012	1.9	2.8	26	14
MW-70D	5/3/2012	**5**	1	53	32
	8/9/2012	**10**	<4	240	59
	11/29/2012	<5	<5	70	23
LE-16	5/2/2012	**12**	**50**	250	27
	8/13/2012	**37**	**210**	790	**140**
	12/3/2012	**58**	**220**	**1,100**	**110**
MW-33BR	5/2/2012	**10**	**100**	28	<10
	8/13/2012	**5**	**92**	12	<4
	12/3/2012	2.1	**66**	<2	<4
MW-58BR	5/3/2012	**27**	**79**	280	70
	8/14/2012	**7.2**	**47**	68	26
	12/3/2012	**16**	**63**	92	37
LE-6	1/13/2012	<1	1.2	<1	<10
	5/2/2012	<1	3.9	<1	<5
	8/14/2012	<1	**50**	<1	<2
	12/3/2012	<1	16	<1	<2

Notes: Values in bold typeface are equal to or above the GAA Groundwater Standard

9.0 CONCLUSIONS

In September of 2001, methyl tertiary-butyl ether (MTBE) was discovered in the public drinking water well PW-3A in Pascoag, RI. The source of the contamination was determined to be the property located at 24 North Main Street in Pascoag (North Main Street Mobil). The extent of the release was exacerbated as public well PW-3A drew contaminants approximately 1,500 feet in a northerly direction from the source across an area covering approximately 20 acres. Other contaminants of concern are all gasoline related constituents and include benzene, ethylbenzene, toluene, xylenes, naphthalene and various oxygenates.

Soon after the discovery of the contamination, RIDEM took over investigation and remediation of the release. On January 11, 2002, PW-3A was decommissioned and Pascoag’s water distribution system was connected to the nearby Village of Harrisville’s water supply to provide the residents of Pascoag with clean potable water.

Since remedial actions were initiated in late 2001, over 12.5 million gallons of groundwater have been pumped from the Site, treated through activated carbon filters and discharged either to the Pascoag River or to the Town of Burrillville’s wastewater collection system. Approximately 6 million gallons of groundwater were pumped from recovery wells near the Source Area through 2006 and an additional 6.5 million gallons have been pumped from extraction wells north and west of the source area from 2009 through the present. It is estimated that over 3,100 equivalent gallons of gasoline have been removed from the Site as a result of remedial actions. Most of this (approximately 3,000 gallons) was removed during the initial actions performed from 2002 through 2006 when contaminant concentrations were at their highest. Exact quantification of the volume of gasoline removed is difficult due to variations in pollutant mobility and the rates of attenuation within the aquifer.

No remediation work was conducted directly in the Source Area as part of the latest remedial phase that began in 2009. However, a limited number of groundwater samples have been collected from the source area. Laboratory results from these samples indicated that groundwater containing MTBE and Benzene above GAA Groundwater Standards was present. Additional assessment is required to determine the overall status of the Source Area.

9.1 Historical Groundwater Sampling Results

The approximate spatial distribution of groundwater with MTBE and/or benzene concentrations above their respective GAA Groundwater Standards in 2002 and again in 2006 is illustrated in Figures 5A and 5B. In 2002 the land area with groundwater above GAA Standards for MTBE and/or benzene was approximately 20 acres. In 2006 this area had been reduced to approximately 15 acres. While the total impacted area was not greatly reduced from 2002 to 2006 the concentrations of contaminants present in the groundwater were significantly reduced as shown in Table 4. For example, MTBE in LE-16 was reduced from 55,000 µg/l in 2002 to 480 µg/l in 2006 (a 99 percent reduction in MTBE levels).

Table 4: Historical Reduction in Contaminant Levels

Monitoring Well	2002		2006		2012	
	MTBE	Benzene	MTBE	Benzene	MTBE	Benzene
AE-11	2,200	2,000	110	540	14	ND
LE-2	8	ND	ND	ND	ND	ND
LE-3d	ND	ND	ND	ND	ND	ND
LE-6	8,100	1,100	92	0.58	50	ND
LE-7	3,300	ND	2.2	ND	4.2	ND
LE-15M	14,000	ND	31	4.4	1.4	ND
LE-15d	97	ND	780	ND	440	ND
LE-16	55,000	3,700	480	210	210	37
MW-14d	17,000	ND	ND	ND	ND	ND
MW-18S	45,000	710	11,000	530	ND	ND
MW-20d	14,000	ND	0.68	ND	ND	ND
MW-21d	26,000	530	480	ND	4.5	ND
MW-28d	97,000	3,400	800	490	37	10
MW-31d	ND	ND	3.4	ND	ND	ND
MW-32d	410	ND	64	0.57	ND	ND
MW-33BR	19,000	190	2000	20	92	5
MW-41M	NS	NS	760	ND	ND	ND
MW-42d	8	ND	1,800	6.5	2.9	ND
MW-44	NS	NS	2,400	38	4.4	ND
MW-45d	NS	NS	1,400	220	ND	ND
MW-47R	NS	NS	880	14	1.8	ND
MW-49R	NS	NS	12	1.3	1.2	ND
MW-50R	NS	NS	10	0.66	4.1	3.6
MW-56	NS	NS	0.55	ND	ND	ND
MW-58d	NS	NS	1,500	1,200	45	52
MW-59d	NS	NS	98	ND	22	1.9
MW-58BR	NS	NS	NS	NS	47	7.2
MW-70BR	NS	NS	NS	NS	3.4	5.7
MW-70d	NS	NS	NS	NS	ND	10

Notes:
1: Units for results is µg/l
2: Bold values were above applicable GAA Groundwater Standards (40 µg/l for MTBE and 5 µg/l for benzene)
3: NS - Not sampled
4: ND - Not detected above laboratory detection limits

9.2 Groundwater Sampling Results 2012

Groundwater is currently being pumped continuously from four remedial wells (BETA-1, BETA-2, MW-28BR, and MW-58BR) located at the southern end of Area 4 at a combined rate of 4 to 5 gpm. Pumped groundwater is conveyed to an activated carbon treatment system prior to discharge to the Town of Burrillville's wastewater collection system.

Analytical data from recent groundwater sampling events shows that significant progress has been made toward the achievement of the State's GAA Groundwater Standards as shown in

Figure 6C. However, the concentration of some contaminants of concern, including MTBE, benzene and ethylbenzene remain above their respective GAA Groundwater Standards in several monitoring wells. The two areas currently above the GAA Groundwater Standards are shown in Figure 6C.

The highest concentration of MTBE is present in well LE-15D having ranged from 340 μg/l to 970 μg/l over the four quarterly sampling events in 2012. Well LE-15D is situated in the southern part of Area 3 and in line with the source and public well PW-3A. It is drilled to a depth of 60 feet below ground surface and hammered 37 feet into bedrock. In this same line is well LE-16, which has exhibited MTBE concentrations ranging from 50 μg/l to 220 μg/l and benzene concentrations ranging from 12 μg/l to 58 μg/l. Well LE-16 is located in the northern part of Area 2 and is drilled to a depth of 38 feet below ground surface and 8 feet into bedrock. Historically the concentrations of MTBE and benzene in both of these wells have been some of the highest recorded. The concentration of MTBE in well LE-15D remains at similar levels to those reported in 2005. It should be noted that wells LE-15D and LE-16 are located in areas where the bedrock is relatively flat which could be inhibiting the natural migration of the contaminants.

In assessing the vertical distribution of contaminants, it is evident that higher concentrations of contaminants are found in the “deep” and “bedrock” wells throughout the Site. In addition to the contamination noted in wells LE-15D and LE-16, strong gasoline odors and visible sheens have been consistently noted in bedrock wells MW-33BR and MW-34BR. These wells have historically had high concentrations of gasoline constituents, however from the sampling conducted during 2012, only the concentration of MTBE in MW-33BR was above the GAA Groundwater Standard. Well MW-33BR is drilled to a depth of 36 feet below ground surface and 20 feet into bedrock. Well MW-34BR is drilled to a depth of 26 feet below ground surface and 12 feet into bedrock. It is likely that as public well PW-3A was drawing contaminants to the north and east it was also pulling the contaminants downward toward and through bedrock. As a result, gasoline related contaminants could remain trapped in bedrock fractures.

During the January 2012 sampling event, four existing river wells, MW-46R, MW-47R, MW-49, and MW-50R, were sampled for VOCs. In 2006, benzene, MTBE, and naphthalene was detected above GAA Groundwater Standard in samples from the river wells, however the current results were all well below GAA Groundwater Standards. Surface water samples were also collected and tested for VOCs during the January 2012 sampling event. In 2006, MTBE was detected at low levels in surface water samples. The results for the surface water samples collected in January of 2012 were all below laboratory detection limits. Based on the laboratory results, contaminants previously present in the groundwater proximate to the Pascoag River and in the surface water have been reduced to below current GAA Standards.

10.0 RECOMMENDATIONS

Since contaminant concentrations were detected above GAA Groundwater Standards in several deep/bedrock wells, a permanent solution has not yet been achieved. As such, additional remediation will be required at the Site. BETA’s recommendations for the Site are as follows:

- The active groundwater treatment system should be operated until the next remedial phase of the project has been determined. Currently, the groundwater treatment system is pumping and treating water from an area where contaminant levels are above GAA Groundwater Standards.

The radius of influence of the pumping operation is shown on Figure 4. Turning off the treatment system may allow contaminants being captured by the system to again flow to the Pascoag River. Also, the amount of subsurface volatization may increase and raise the risk for vapor intrusion down-gradient of the treatment system.

- Contaminants above GAA Groundwater Standards are still present in the vicinity of LE-15D and LE-16. The addition of pumping wells in this area to treat groundwater through the existing system should be evaluated.

- Due to the known presence of gasoline related contaminants at concentrations above their respective GAA Groundwater Standards within the aquifer, no public well should be activated and connected to the potable water distribution system without the water being first treated appropriately. There is a high probability that these contaminants will be drawn from the bedrock and overburden into the water supply well. Trapped VOCs mobilized by activating a new drinking water well may result in vapor intrusion issues and/or adversely impact the adjacent river. The proper level of treatment should be reviewed thoroughly before a process is implemented so that the public health and well-being are duly protected. Before any new well is activated, the public served by the well should be notified and allowed an opportunity to comment.

Figures

LEGEND

🟥	SOURCE AREA
▨	FORMER UST
●	MONITORING WELL
T–1	6,000 GALLON GASOLINE
T–2	6,000 GALLON GASOLINE
T–3	6,000 GALLON GASOLINE
T–4	500 GALLON
T–5	1,000 GALLON KEROSINE
T–6	6,000 GALLON DIESEL
T–7	2,000 GALLON GASOLINE

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SCALE:
1" = 40'
0 20 40 80
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FIGURE 1
SOURCE AREA PLAN
PASCOAG, RI

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FILE NO.
SHEET 1

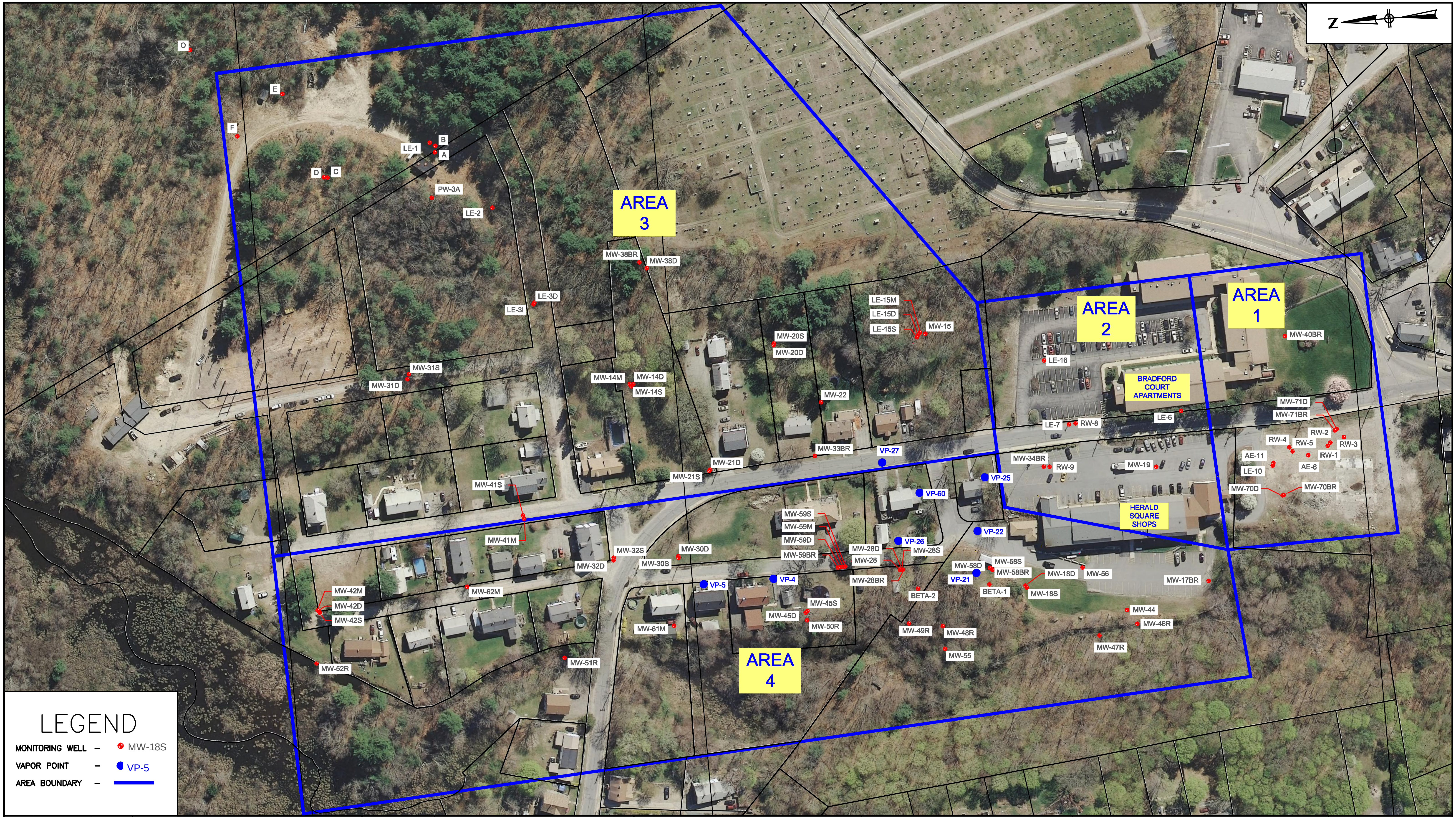

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FIGURE 2
SITE PLAN
PASCOAG, RI

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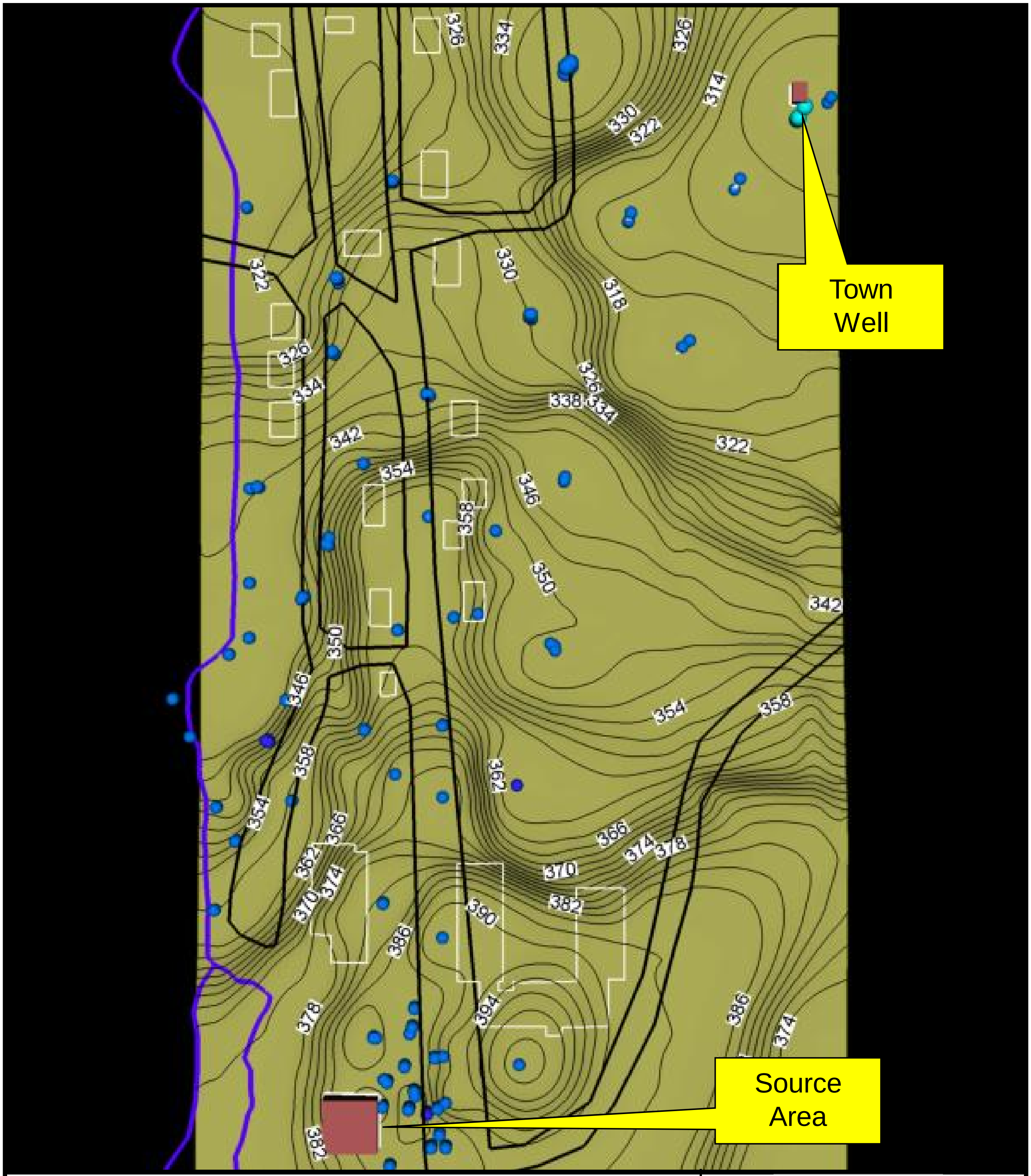

Figure 3: Bedrock Contour Map

Pascoag, RI
(Not to Scale)
Mapping provided by RIDEM

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FIGURE 4
BEDROCK GROUNDWATER CONTOUR PLAN
PASCOAG, RI

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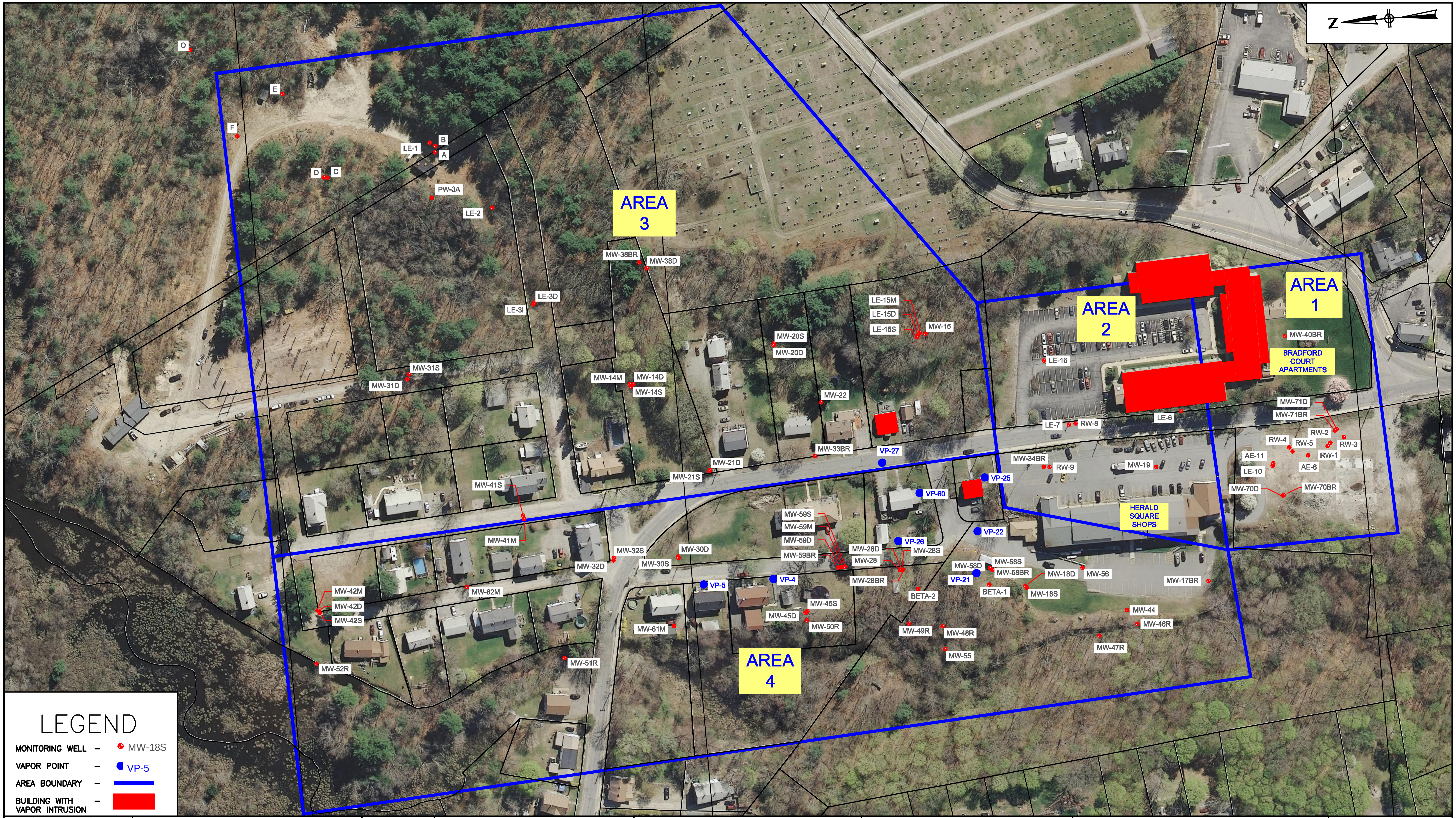

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FIGURE 5
VAPOR INTRUSION PLAN
PASCOAG, RI

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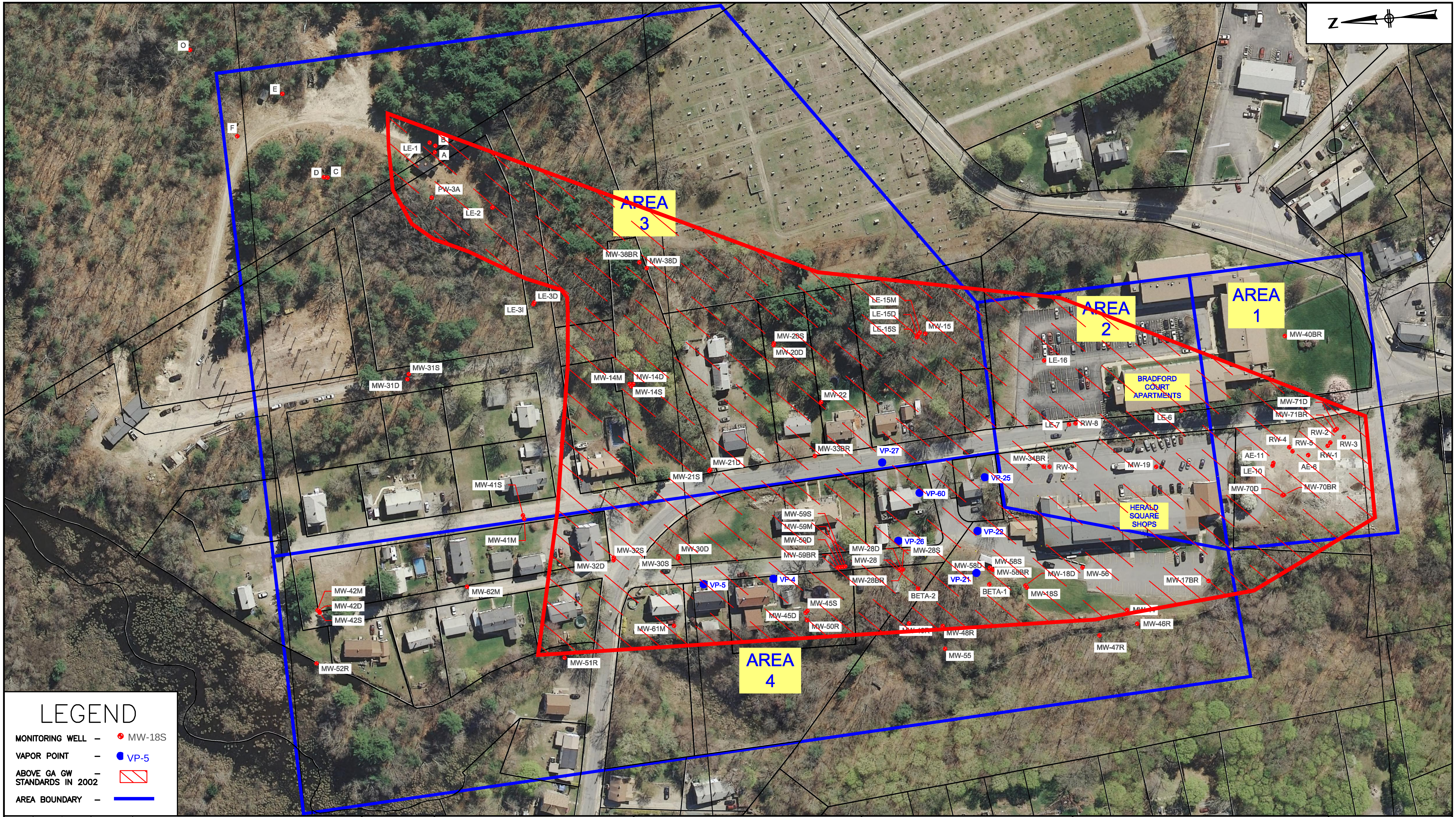

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FIGURE 6A
APPROXIMATE AREA ABOVE RIDEM GA GROUNDWATER OBJECTIVES 2002
PASCOAG, RI

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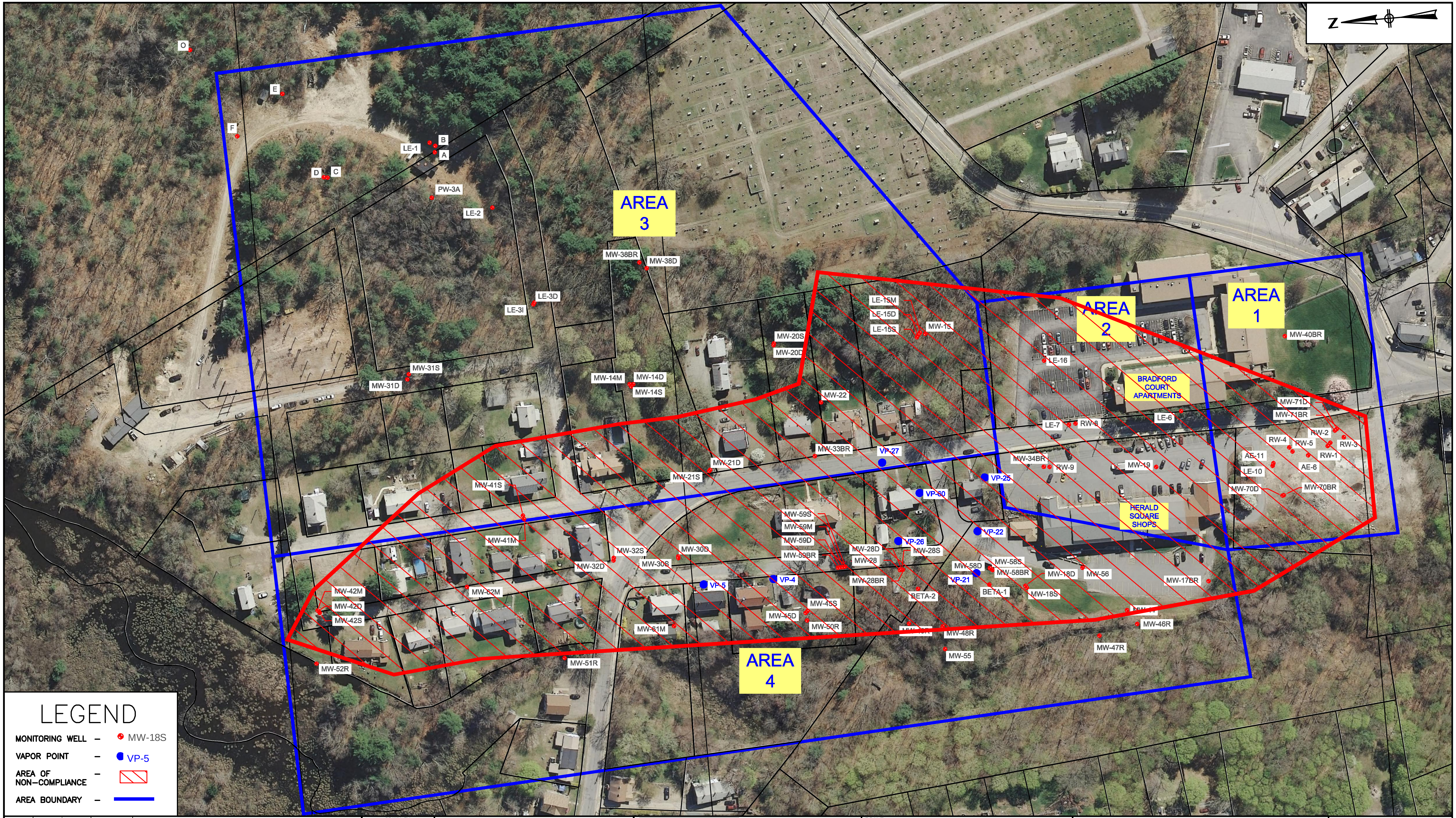

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FIGURE 6B
APPROXIMATE AREA ABOVE RIDEM GA GROUNDWATER OBJECTIVES 2006
PASCOAG, RI

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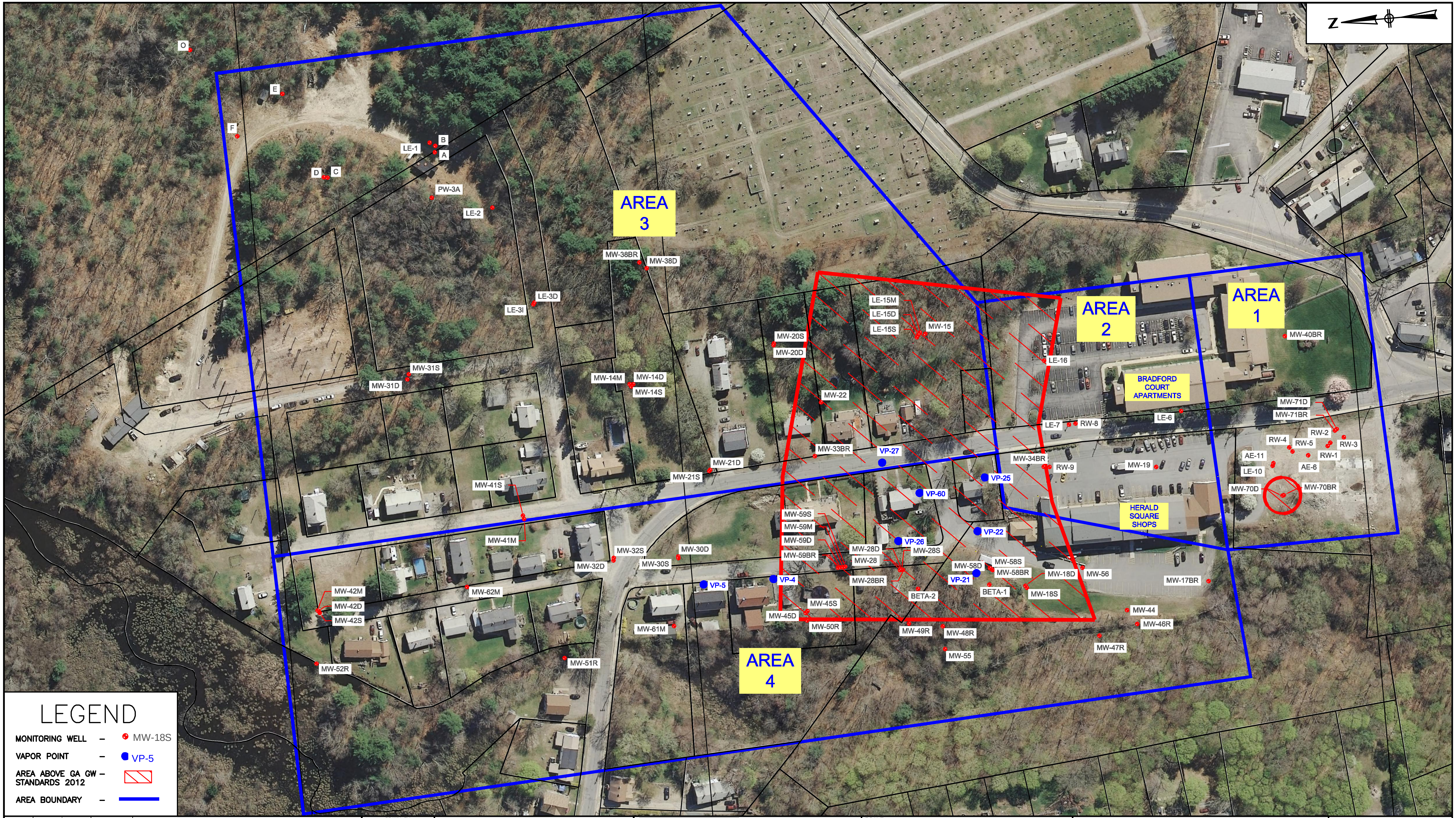

LEGEND

MONITORING WELL – ● MW-18S

VAPOR POINT – ● VP-5

AREA ABOVE GA GW STANDARDS 2012 – ▨

AREA BOUNDARY – ━

NUMBER	DATE	MADE BY	CHECKED BY	DESCRIPTION

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FIGURE 6C

APPROXIMATE AREA ABOVE RIDEM GA GROUNDWATER OBJECTIVES 2012

PASCOAG, RI

JOB 3954

FILE NO.

SHEET 1

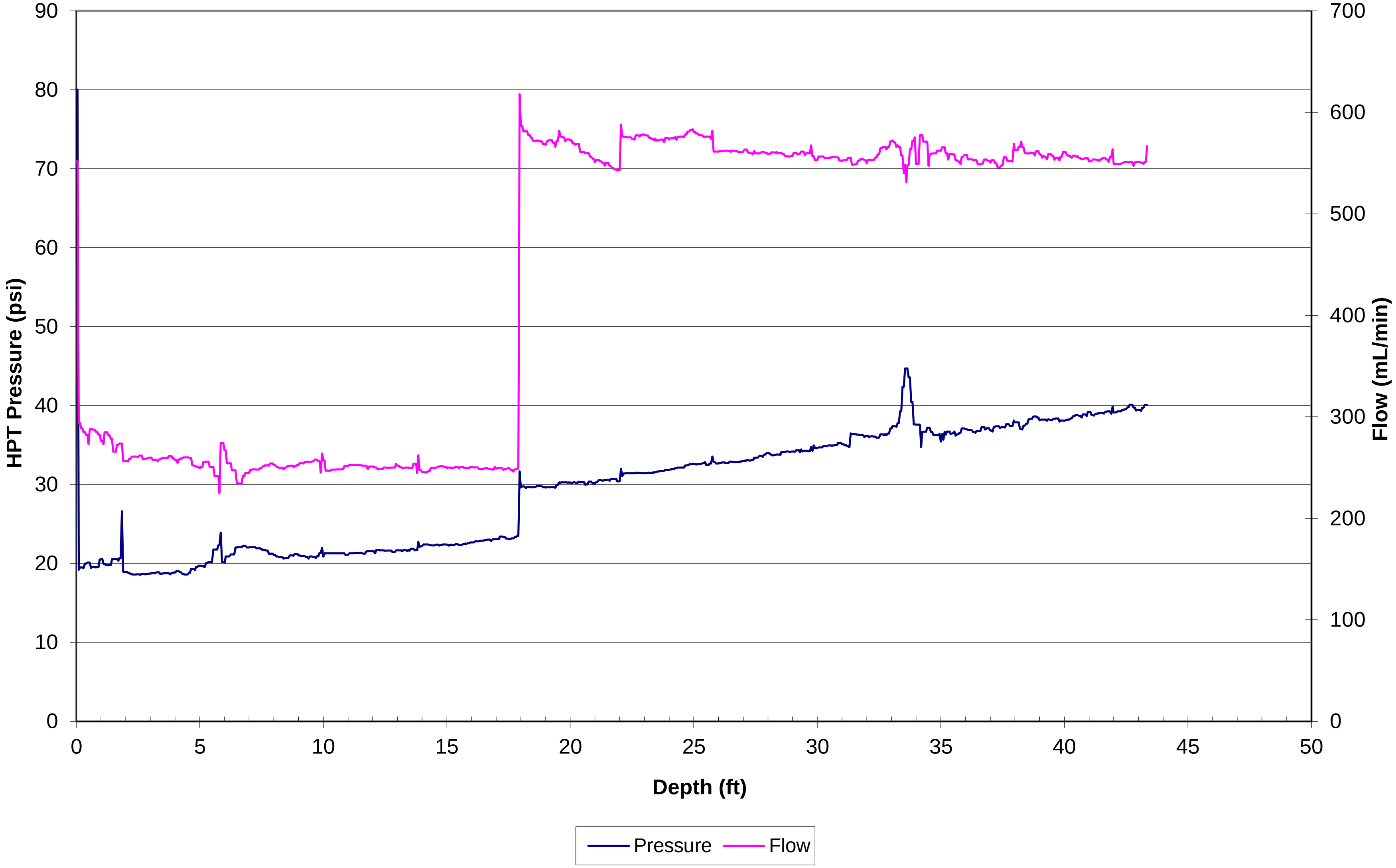
Appendix A: Hydraulic Conductivity

A.1: HTP Boring Results

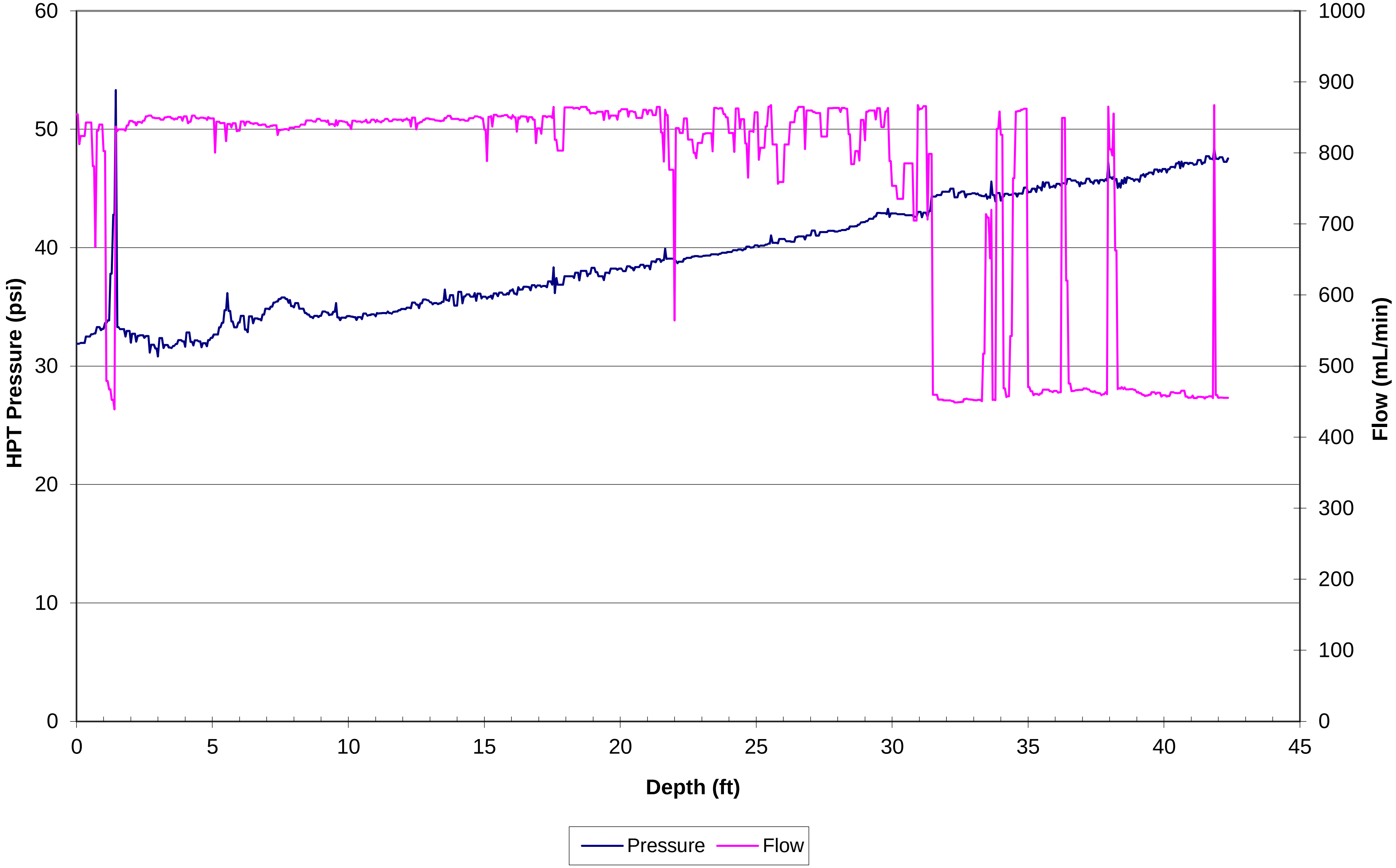
A.2: Slug Test Results

A.1: HTP Boring Results

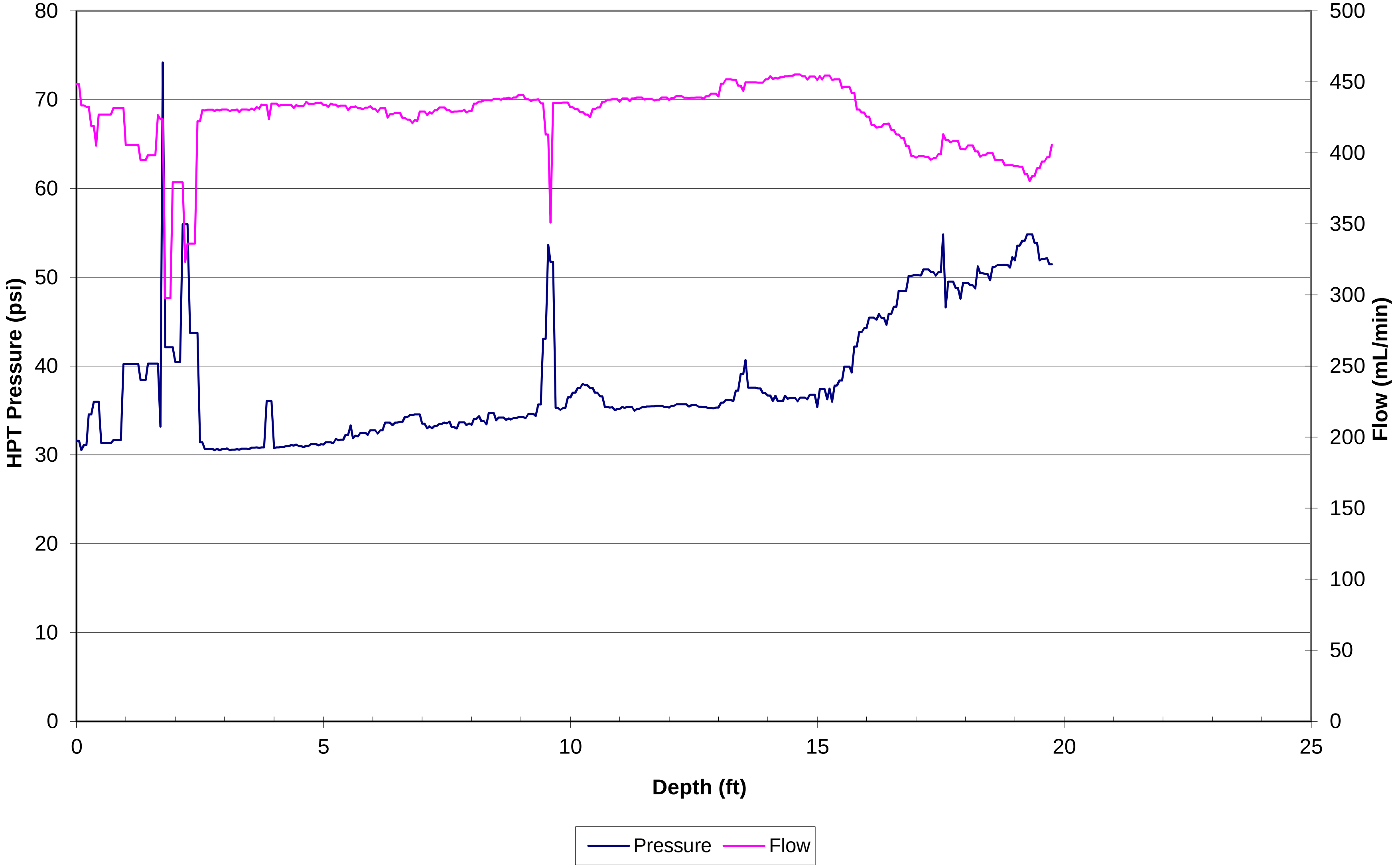
M0507 - (RIDEM1) - Pascoag, RI - 3/7/06



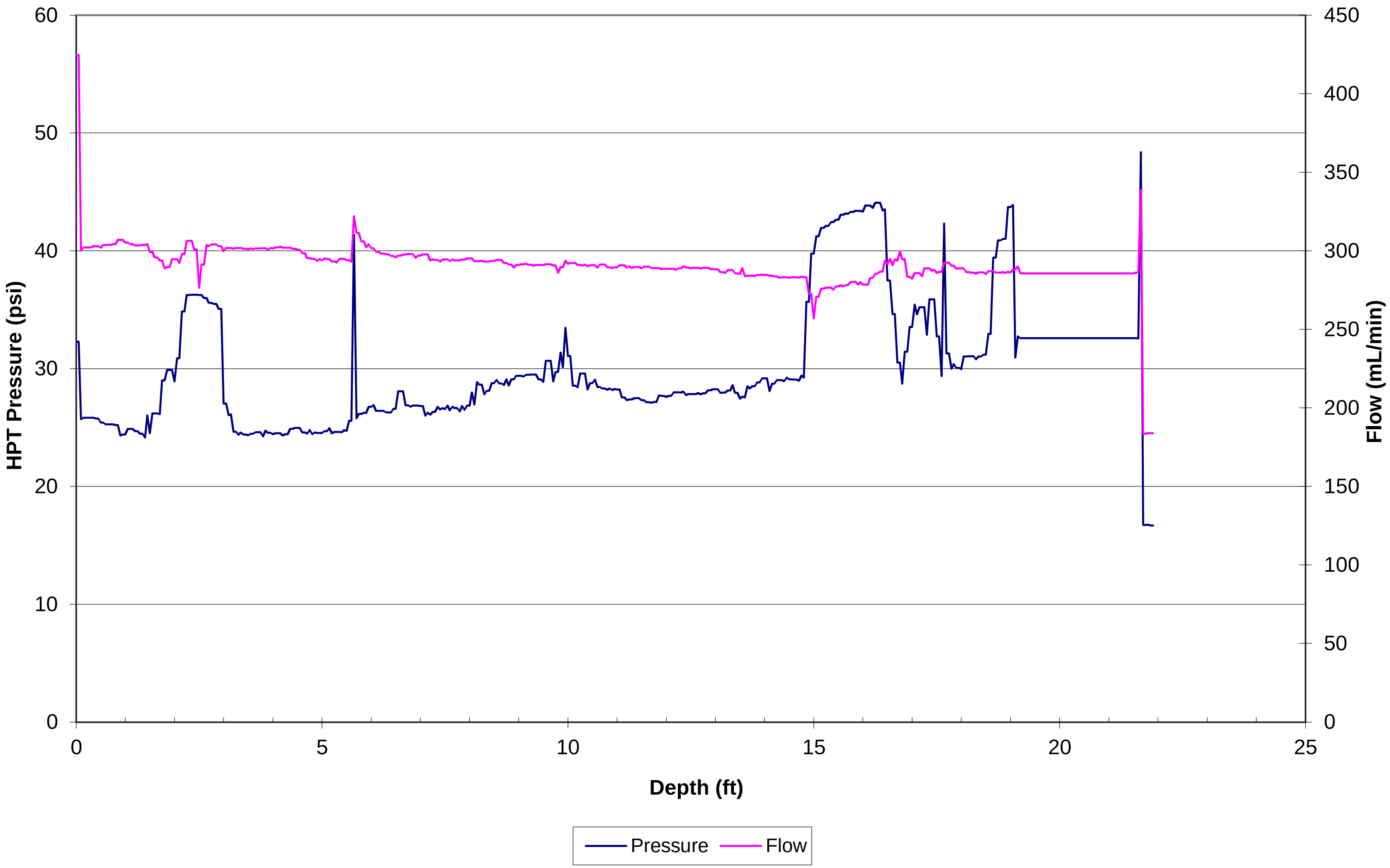
M0507 - (RIDEM2) - Pascoag, RI - 3/7/06



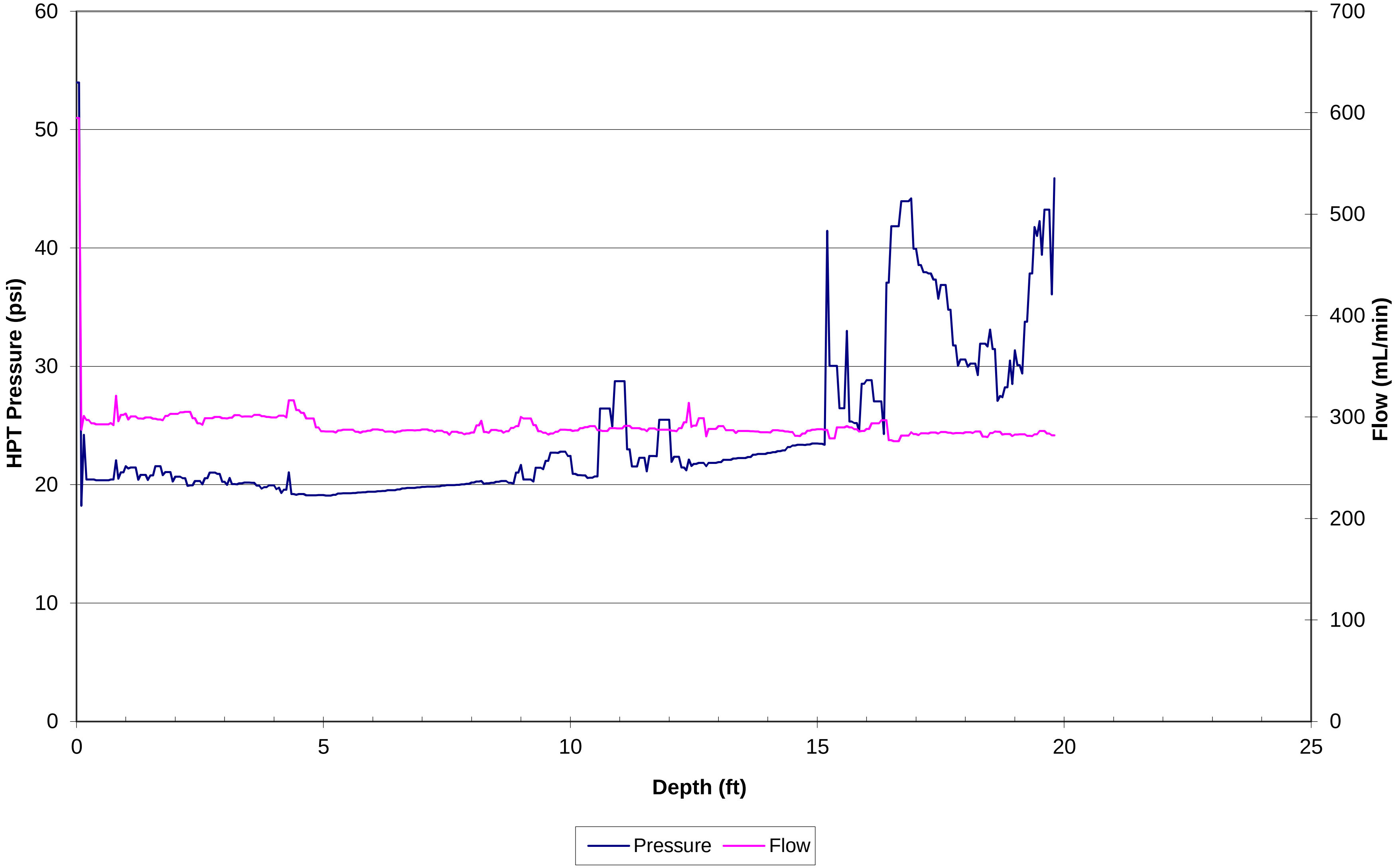
M0502 - (RIDEM3) - Pascoag, RI - 3/7/06



M0502 - (RIDEM4) - Pascoag, RI - 3/7/06



M0511 - (RIDEM5) - Pascoag, RI - 3/7/06



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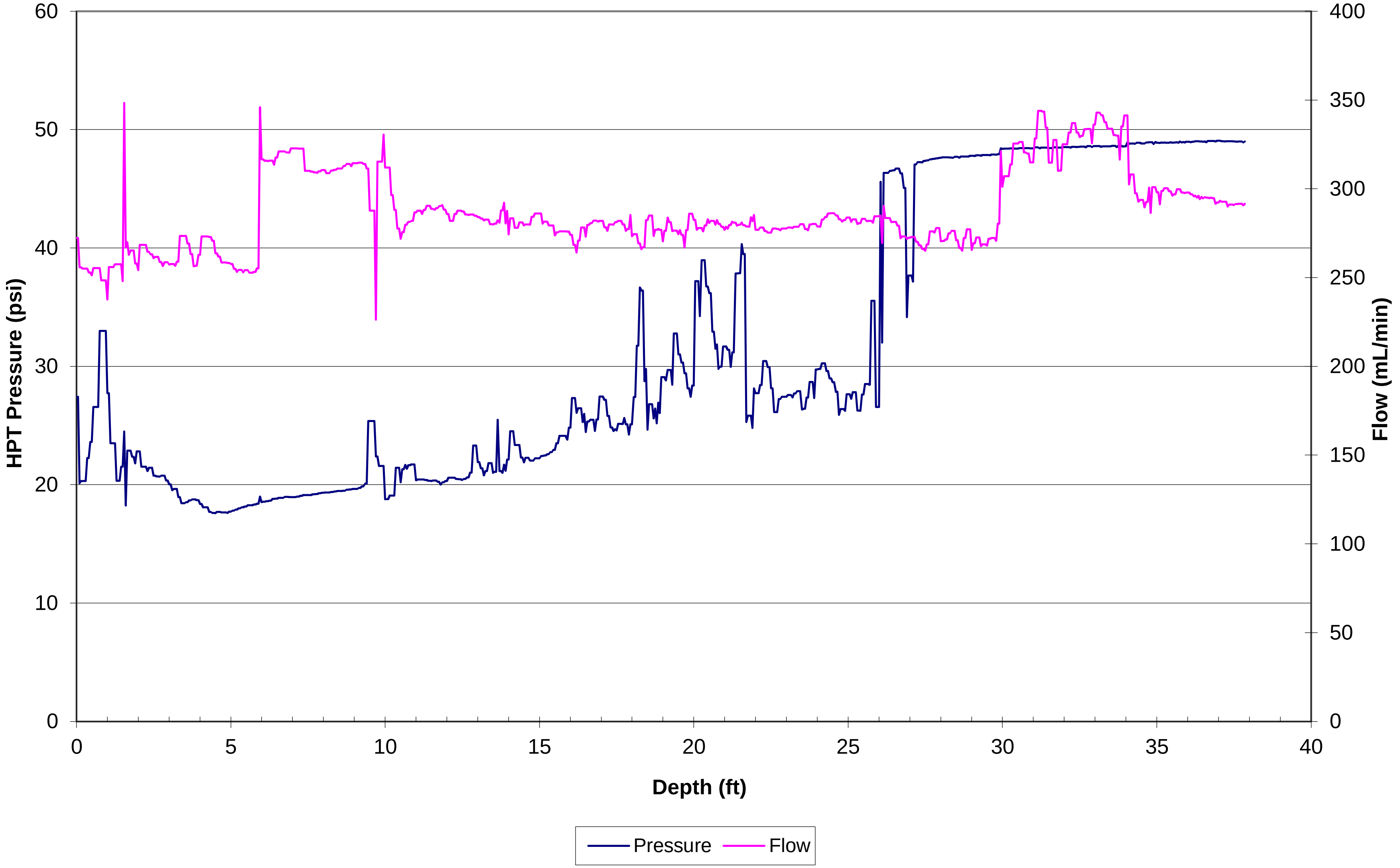
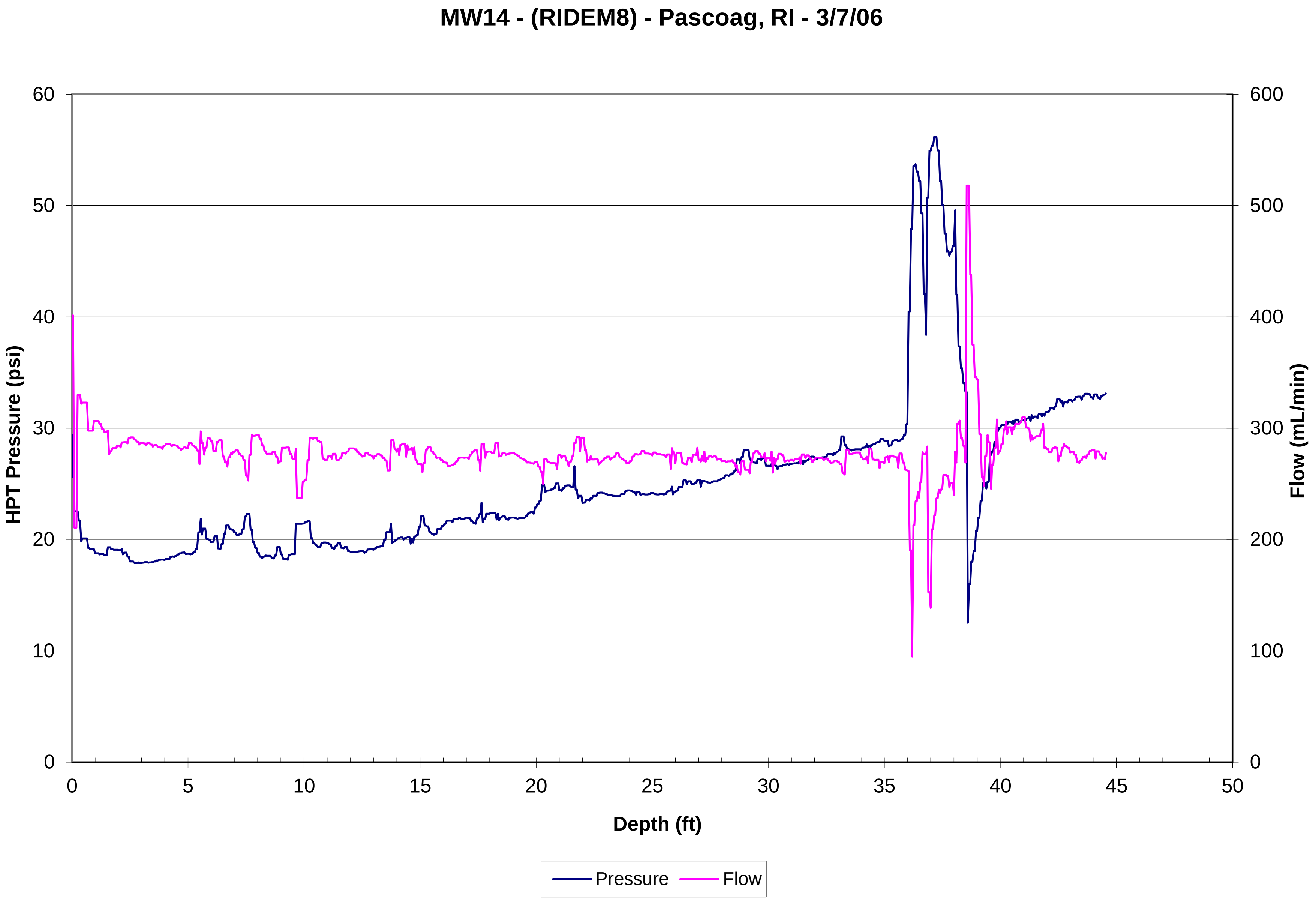
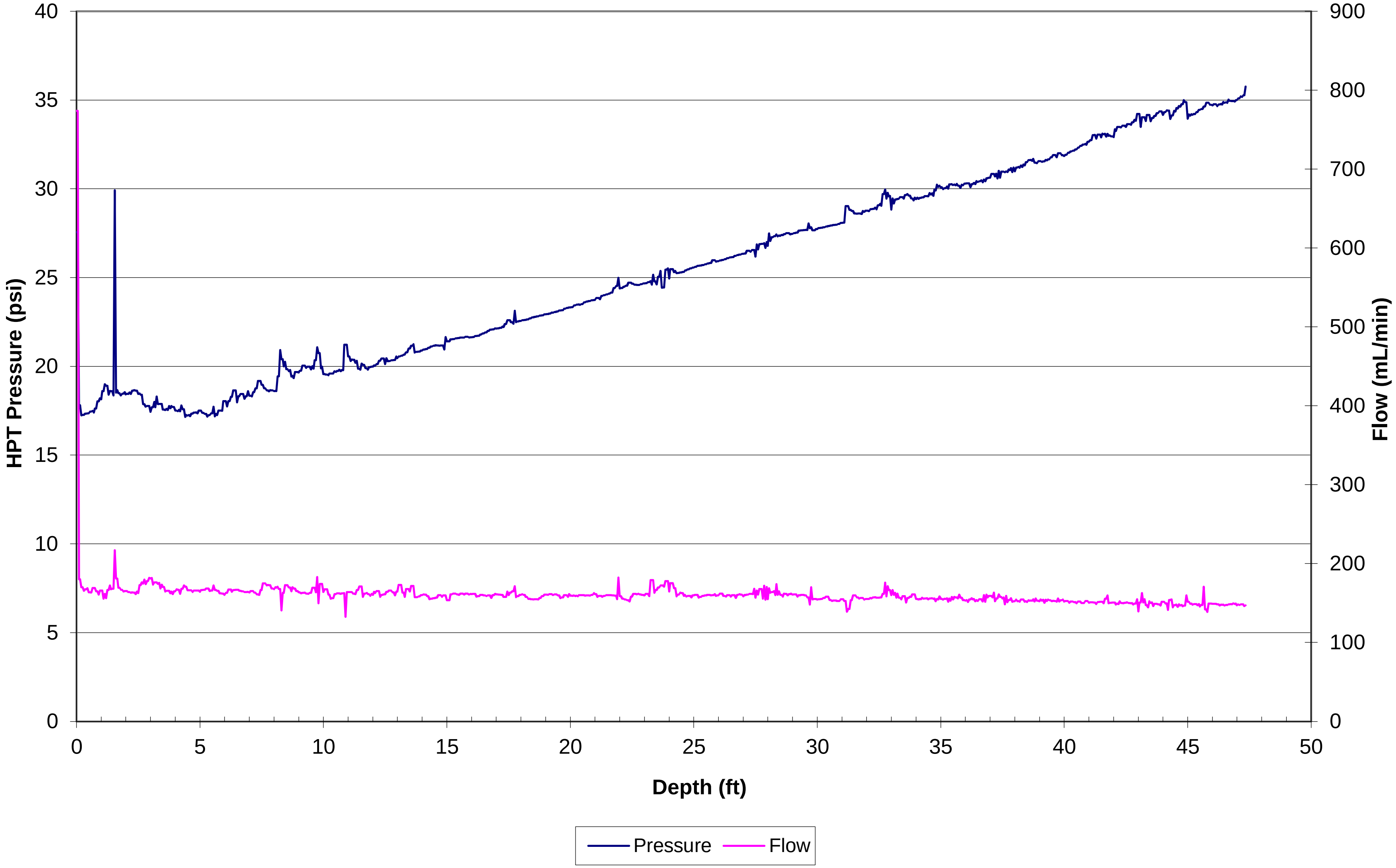
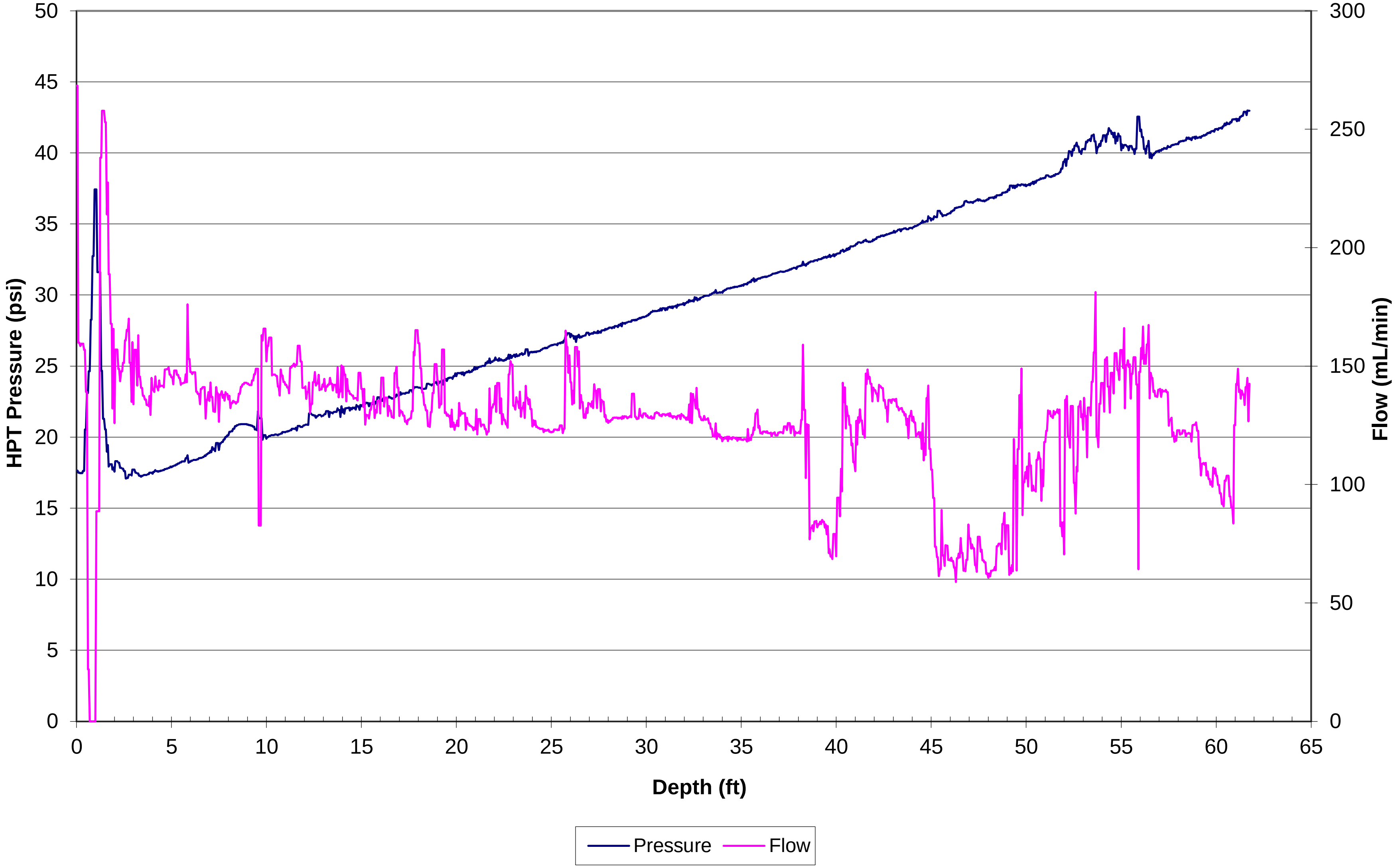



MW14 - (RIDEM8) - Pascoag, RI - 3/7/06
HPT Pressure (psi)
0
10
20
30
40
50
60
Flow (mL/min)
0
100
200
300
400
500
600
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
Pressure
Flow

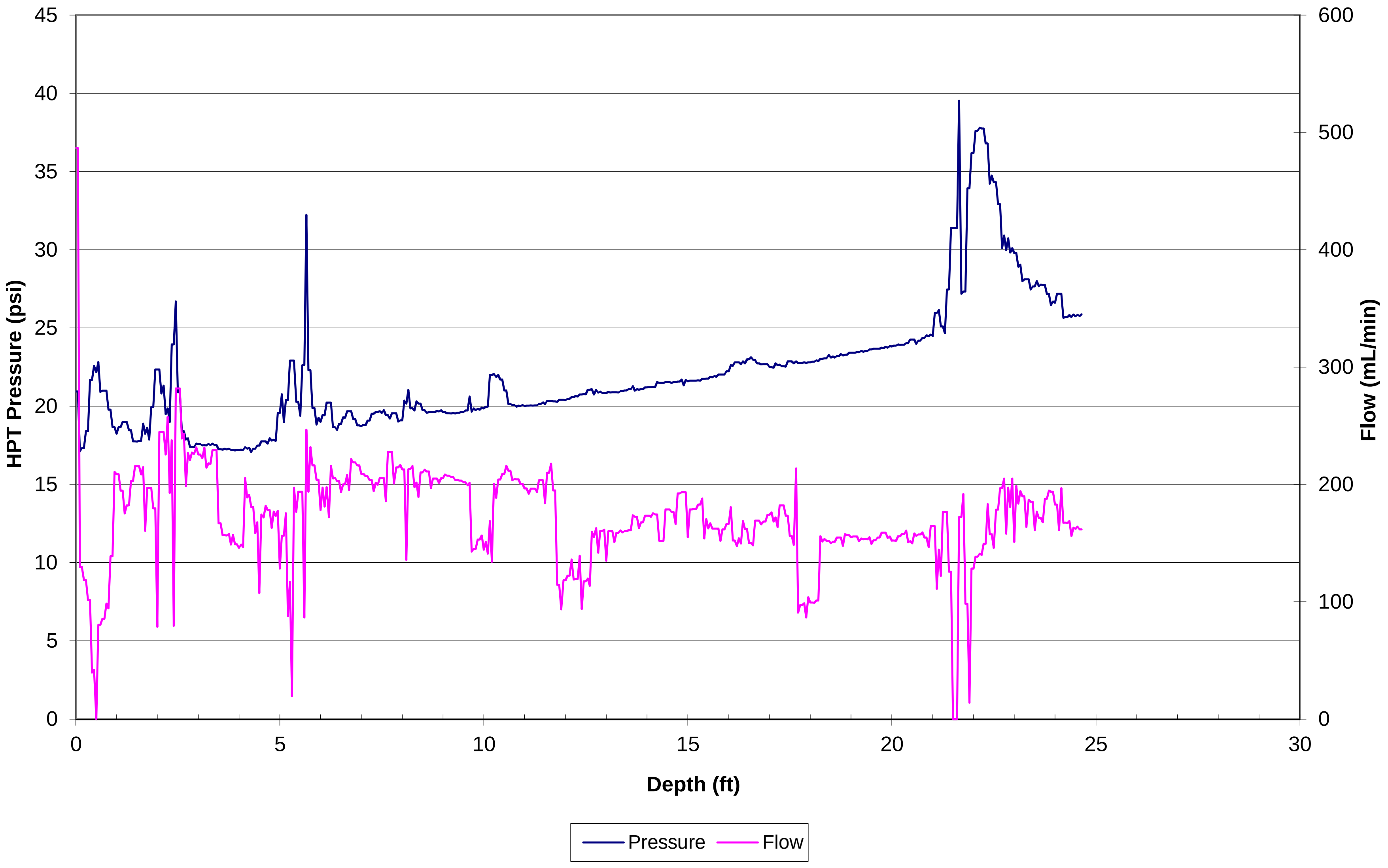
M0507 - (RIDEM9) - Pascoag, RI - 3/7/06



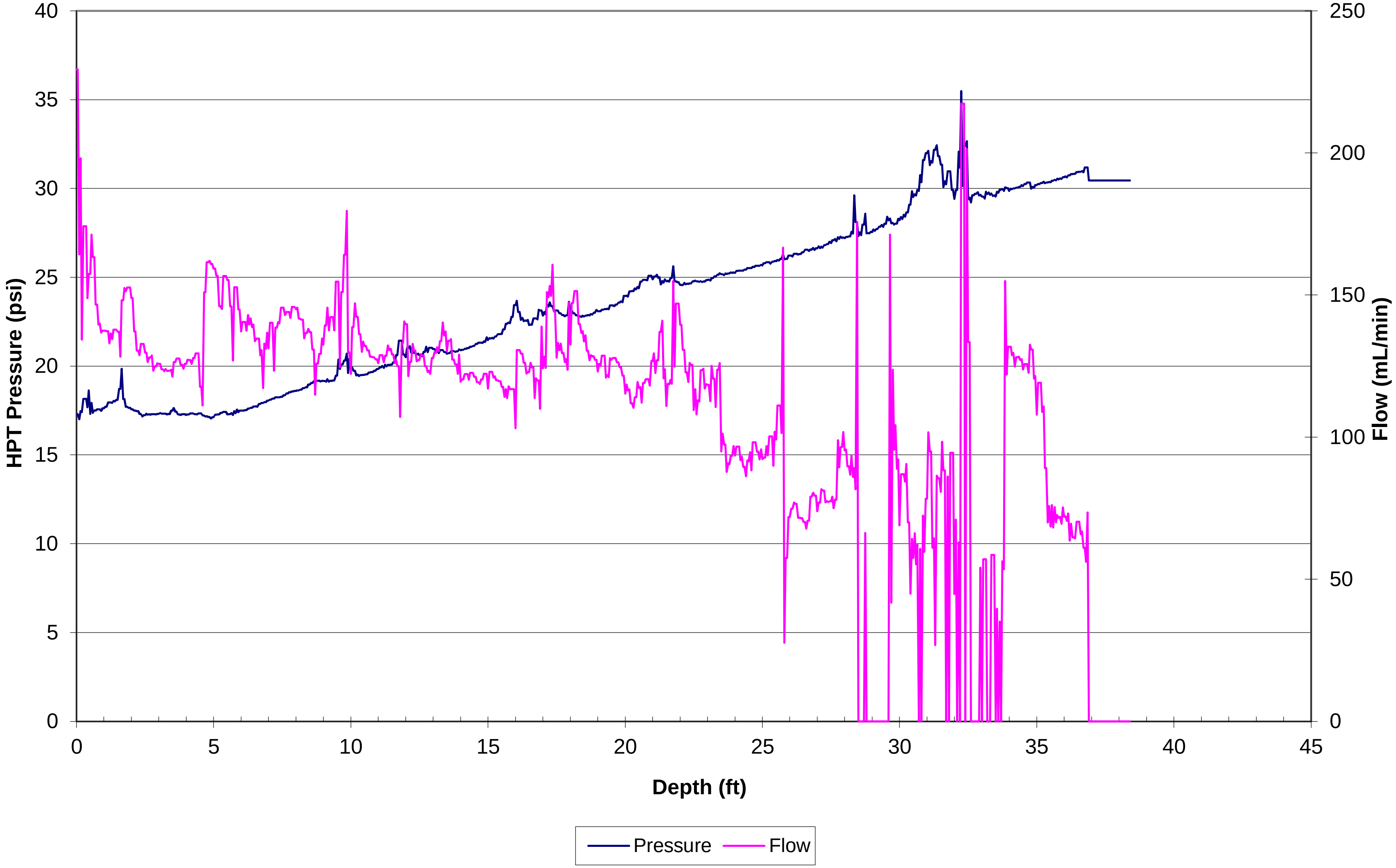
PW3A - (RIDEM10) - Pascoag, RI - 3/7/06



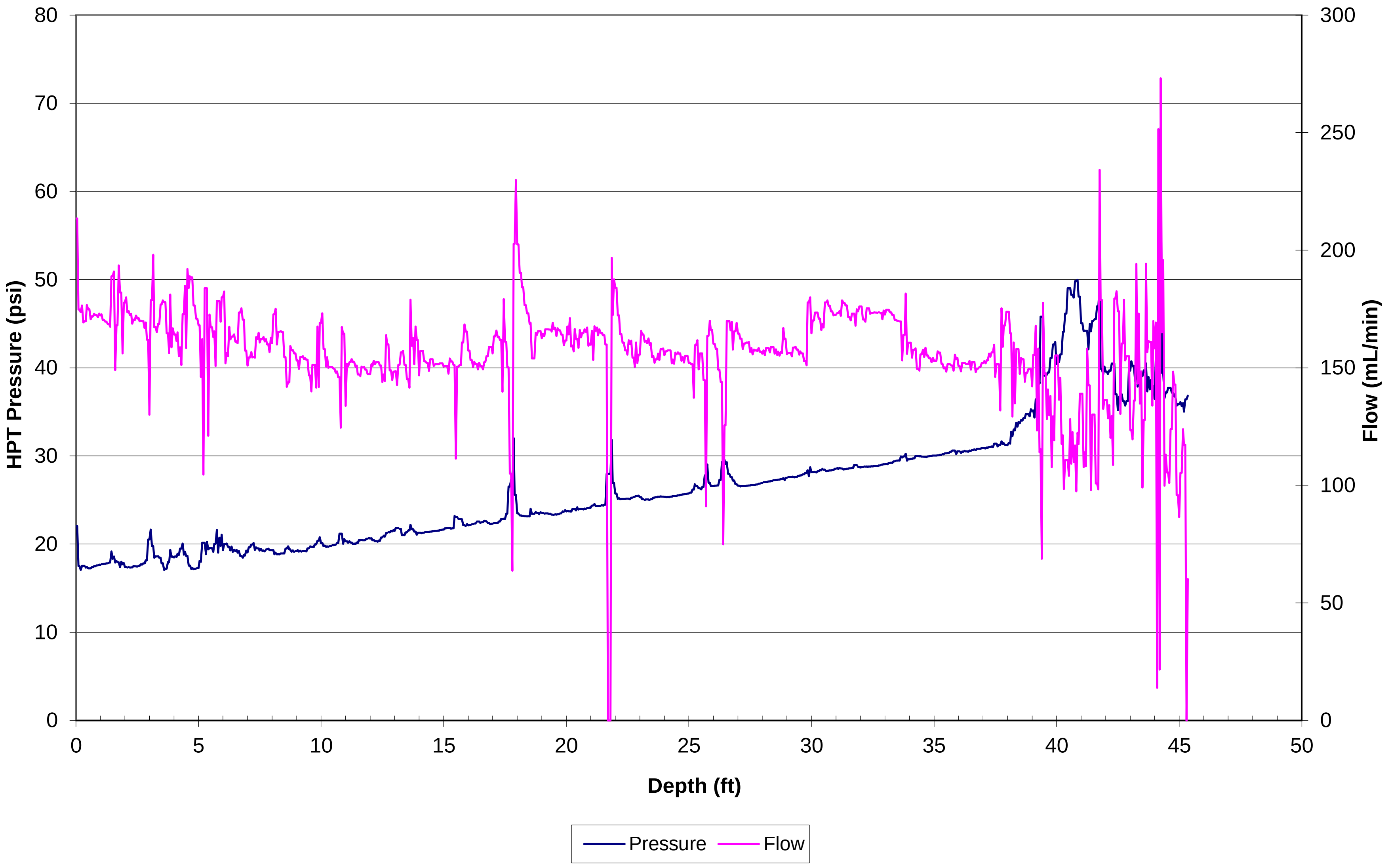
M0504 - (RIDEM11) - Pascoag, RI - 3/7/06



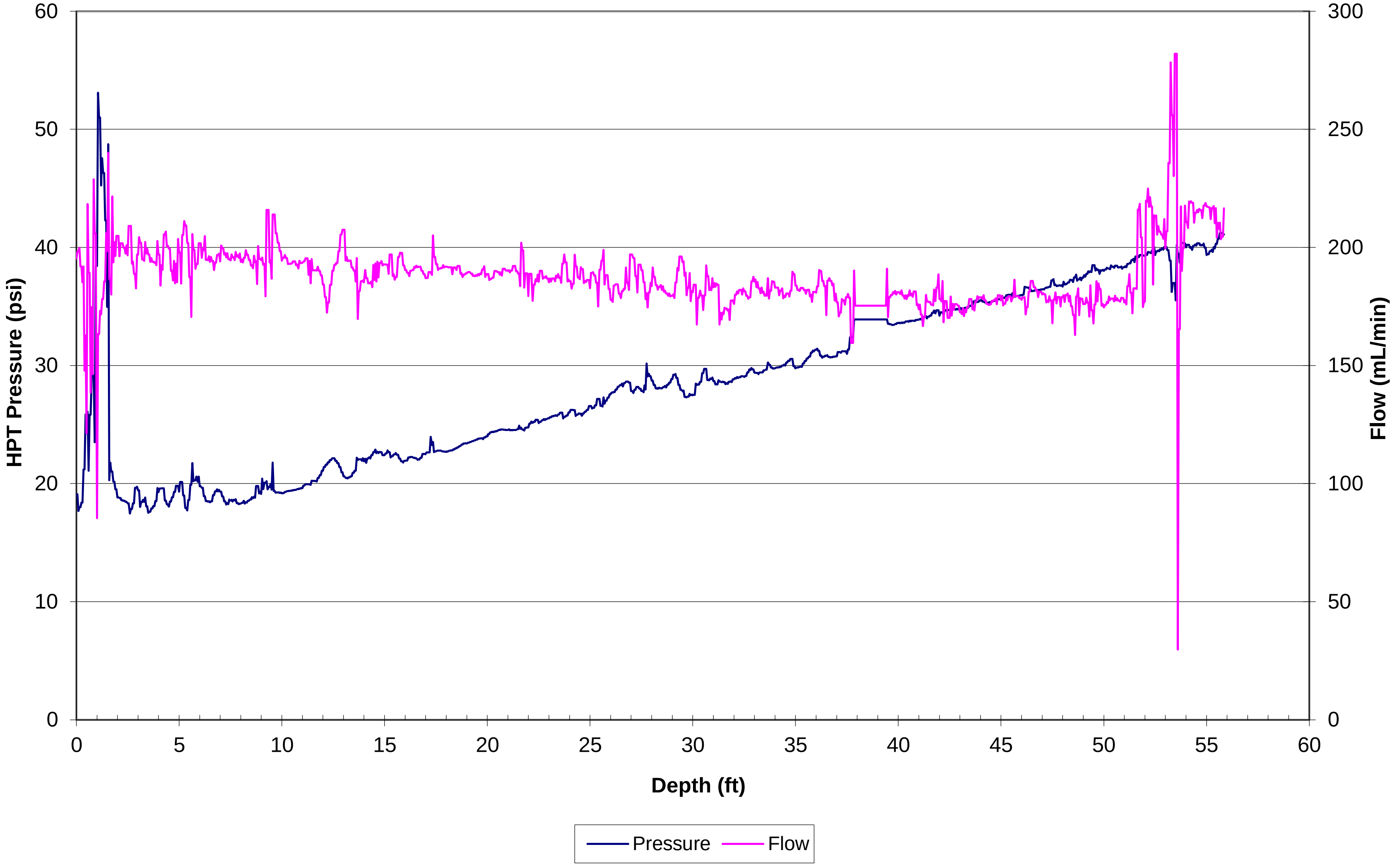
M0505 - (RIDEM12) - Pascoag, RI - 3/7/06



M0506 - (RIDEM13) - Pascoag, RI - 3/7/06



MW42 - (RIDEM14) - Pascoag, RI - 3/7/06



A.2: Slug Test Results

RI-DEM

F.I.R.S.T.

FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

Rhode Island
Department of Environmental Management

SLUG TEST REPORT

For

RI-DEM SITE: LS 0329
24 NORTH MAIN STREET
PASCOAG, RHODE ISLAND

August 2005

INTRODUCTION

The purpose of this work is to find the saturated hydraulic conductivity for monitoring wells within: (1) the unconsolidated aquifer sediments (2) the fractured bedrock. *(Wells with BR following the identification number indicates a Bedrock well.)*

METHODS PROCEDURE & MATERIALS

Saturated hydraulic conductivity (Ksat) values were determined using the Bouwer Rice slug test method for monitoring wells with known well and geologic information. Pressure transducers supplied the changes in water table elevation over time. Bouwer Rice calculations were calculated using a USGS program.

PROCEDURES

There are two slug-testing procedures used; Procedure A is used for wells that have static water table elevations above the screened section of the well. Procedure B is used for wells that have static water table elevations below the top of the screened interval. Procedure B can be used for wells with water tables above the screened interval also. However Procedure B is used to eliminate water movement into the unsaturated zone from slug displacement, therefore the elevation curve used in Procedure B is from the removal of the displacement slug and **not** from the slug entrance curve.

PROCEDURE A

1. Initial water elevation from top of casing is measured using an interface probe.
2. A pressure transducer is set to record groundwater elevation at 0.5 second intervals Transducer is inserted into the well, water elevation is allowed to equalize due to displacement from transducer
3. A known volume of water (1-4 gallons) is poured into the well.
4. Pressure transducer readings are taken until the initial static water elevation is reached or lowest water elevation is reached.
5. Pressure transducer is removed and the data is downloaded into an excel database.
6. The transducer records an increase in the water elevation as a positive change, corrections for water table elevation are made in an excel database so elevation is

depth to water from top of well casing before use in Bouwer Rice program. *This is done by matching initial static water table, depth to water from top of casing measured with the interface probe, to the water table elevation measurement from the transducer's first static measurement.*

7. Time in hours: minutes: seconds: second fractions, the depth to water at the equivalent time, depth of aquifer, initial water elevation, screened interval, volume of slug, inner diameter of well, annulus diameter of well, fill materials, and geologic media are entered into the slug test program. (see Bouwer Rice sheets) *Elevation measurements used in program are from the peak water elevation (highest water level reached in the well after slug is added) to the lowest elevation the well reaches after the slug is added.*

PROCEDURE B

1. Initial water elevation from top of casing is measured using an interface probe.
2. A pressure transducer is set to start recording groundwater elevation measurements at 0.5 second intervals at a set time. Transducer is outfitted with a non-vented back shell and is inserted into the well by lowering it with a string and securing it, water elevation is allowed to equalize due to displacement from transducer.
3. A solid slug, 1"x 10' or 1" x 5' for 2" or 4" wells and .5" x 10' or .5" x 5' for 1" wells are lowered quickly into the well.
   Note: for all 1" wells solid slugs were lowered into well until: 1) end cap of displacement slug rests upon the top of test well casing 2) slug interferes with the transducer *(in this situation the displacement slug is duct taped in place to prevent movement).*
4. Ample time is given for transducer measurements to be taken as the water elevation stabilizes.
5. Solid displacement slug is quickly removed
6. Ample time is given for transducer measurements to be taken as the water elevation stabilizes.
7. Steps 5-7 in Procedure A are repeated.

MATERIALS

Interface Probe: Geotech Environmental Equipment, Inc

Pressure Transducer: Mini Troll Standard In-Situ Inc

Program: Win-Situ Version 4.5 *(data exported to Excel®)*

Transducer Specifications:

Data gathered using Linear testing

Time between data points:	0.5 Seconds
Measurement type:	Pressure
Channel name:	Water Elevation
Sensor Range:	30 PSIG.
Specific gravity:	1
Mode:	Surface
User-defined reference:	100 Feet H2O
Referenced on:	test start
Pressure head at reference:	0.015 Feet H2O
Firmware Version	3.09
Unit name:	miniTROLL

Transducer Accessories: Non-vented back-shells

Hydraulic Conductivity Program: Bouwer Rice Slug analysis spreadsheet USGS

LIMITATIONS

The Bouwer Rice program uses the elevation data from the peak elevation to the lowest recorded elevation (i.e. static elevation). Due to the immediate infiltration of the slug water before the entire slug could be added into the well, slug volume measurements entered into the Bouwer Rice program are corrected. To do this, the slug volume was changed to represent the difference in volume from static to highest elevation reached, after the addition of the slug. Conductivity values calculated with this method represent average conductivity within screened interval.

The Bouwer Rice calculation requires depth of aquifer. Since bedrock wells are deeper than the defined aquifer depth, aquifer depths were entered as the depth to bottom of the well. Bedrock wells are borings into the bedrock and the fractures are assumed to be equivalent to the screened interval.

This report for hydraulic conductivity was done to assess the conductivity in specific well locations. This report is not intended to be an all-inclusive investigation of the aquifer’s conductivity. The results presented here are based on a limited number of measurements and are not meant to represent the entire location. No warranty is expressed or implied.

Saturated Hydraulic Conductivity (Ksat)

	cm/sec	ft/day
LE 1	0.012	35.3282
AE 6BR	0.00086	2.4255
MW 14S	0.0084	23.7498
MW 14D	0.00016	0.4665
LE 15S	0.033	94.1480
LE 15M BR	0.0045	12.8508
LE 15D BR	0.0000073	0.0207
MW 18	0.0046	12.9800
MW 18D	0.00045	1.2793
MW 28D	0.0059	16.6086
MW 28BR	0.00017	0.4702
MW 29	0.0014	4.0542
MW 30S	0.0069	19.6283
MW 30D	0.00064	1.8063
MW 32S	0.0018	5.0648
MW 32D	0.000076	0.2142
MW 33BR	0.0007	1.9752
MW 42D	0.02	57.4217
MW 44	0.0039	11.1812
MW 45S	0.0063	17.8548
MW 45D	0.0063	17.9084
MW 58D	0.0016	4.5628

Appendix B: **PW-3A**

B.1: PW-3A Construction Logs

B.2: Keys Associates Preliminary Engineering Survey and Report

B.3: HydroSource Associates, Inc. Well Report

B.1 PW-3A Construction Logs

WELL LOG

CLIENT: Pascoag Fire District
PROJECT: New Silver Street Bedrock Well

WELL: 16" OD

Driller : Layne Christensen
Logged By : Joseph C. Ingari
Date : September 9 to 12, 1999
Casing BGS : 57'; 7" telescoping 140-slot SS V wire screen; 2'6" stick-up AGS
Total Depth : 64'

DEPTH IN FEET	DESCRIPTION
0' - 7'	Fine to medium sand
7' - 9'	Peat; organic matter; wood chips
9' - 10'	Medium sand; some fine sand; trace gravel
10' - 12'	Medium to coarse sand
12' - 29'	Fine to medium sand with some coarse sand and fine gravel lenses
29' - 34'	Medium sand and fine gravel; trace fine sand
34' - 44'	Fine to very fine sand; trace gravel
44' - 46'	Brown silt; clay
46' - 47'	Fine gravel; some fine to medium sand
47' - 48'	Very fine sand
48' - 50'	Boulder bed; mixture of fine sand and spalled, rounded boulder fragments; irregular drilling
50' - 53'	Medium sands and gravels; some fine sand
53' - 54.8'	Green/gray silt; clay with sand and angular pebbles; olive green drill water; hard drilling (till)
54.8' - 58.5'	Bedrock; granodiorite to diorite composition; hard, uniform drilling
58.5' - 59.6'	Fracture in granodiorite; large angular chunks of granodiorite
59.6' - 60.4'	Competent granodiorite bedrock; hard, uniform drilling
60.4' - 61.4'	Fracture; large angular chunks of granodiorite
61.4' - 64'	Competent granodiorite; hard, uniform drilling; hole termination at 64'

NOTES

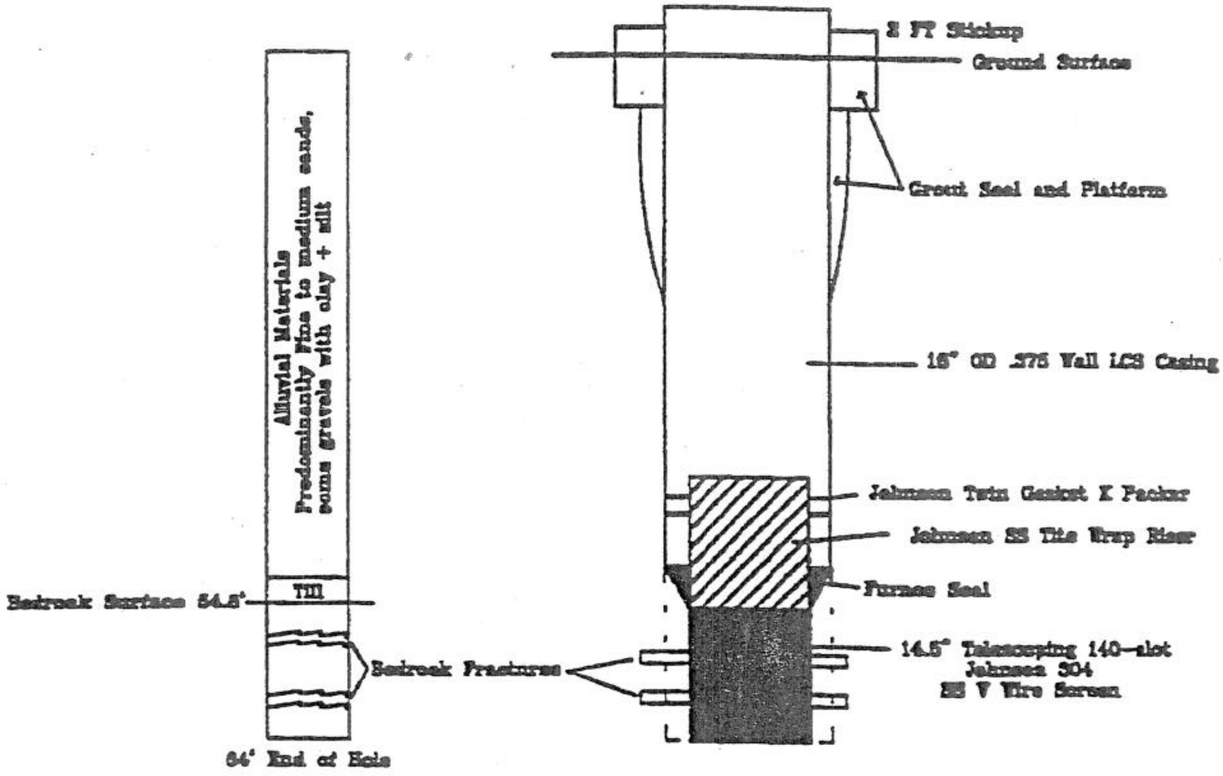
- New .375 wall LCS 16" diameter casing installed to depth of 64 feet; approximately 7' of 14.5" diameter telescoping, 140-slot Johnson stainless steel V wire screen and 5.8' of "Tight Wrap" stainless steel riser installed from bottom hole depth of 64' (64.01' - 51.28'); Furnco rubber seal installed on riser at top of screen interval (56.92'); Integrated twin gasket neoprene K packer installed at top of riser section (51.53'); 16" casing pulled back to depth of 56.29' to expose screen to bedrock formation fractures.

- Well developed with air surging and backwashing for 7 hours; chlorinated then reflushed to waste stream via nearby production well PW #3.

- Well awaiting surface seal and platform, to be poured during pumphouse floor installation.

- Pump testing to be performed upon acquisition of adequately-sized pump and motor.

New Bedrock Water Source for the Pascoag Wellfield



HydroSource Associates, Inc.

[illegible] P.O. Box [illegible]
[illegible], New Hampshire [illegible]
tel: [illegible]
fax: [illegible]
web: [illegible]
email: [illegible]

Project: PHI 283a

Date: 1/3/00

Title: New Bedrock Water Source
Pascoag Silver Street Wellfield

N

Plate:

Scale:

B.2 Keys Associates Preliminary Engineering Survey and Report

PRELIMINARY ENGINEERING SURVEY AND REPORT

ON THE

WATER SUPPLY, DISTRIBUTION AND STORAGE SYSTEM

OF THE

PASCOAG FIRE DISTRICT
BURRILLVILLE, RHODE ISLAND

APRIL,1977

KEYES ASSOCIATES

ARCHITECTS/ENGINEERS/PLANNERS

PROVIDENCE,R.I., WALTHAM,MASS.,WETHERSFIELD,CT.,NASHUA,N.H.

3. DESCRIPTION OF THE STUDY AREA

The Pascoag Fire District is located in the Town of Burrillville which is situated in the northwest corner of the State of Rhode Island approximately 20 miles northwest of Providence. The Fire District is bounded by Massachusetts to the north; Connecticut to the west; by the Town of Glocester on the south; and by the Harrisville Fire District to the east. The Pascoag Fire District roughly encompasses the western half of the Town of Burrillville. The location of the northeast corner of the Fire District at the Massachusetts border is not clearly defined in the most recent General Assembly Act that expanded the district to its current limits. For this reason the exact land area is somewhat indeterminate; however, the Fire District contains approximately 28 square miles. The study area is basically centered around the Village of Pascoag and the service area outlined by the 500 M.S.L. contour elevation. Service to areas above 500' M.S.L. will require additional pumping. The village area of Pascoag is considered the downtown area of the town of Burrillville and is the central most developed section in the town.

Pascoag is drained by three main streams; Mowry Brook, Clear River and the Pascoag River. These streams all join at the eastern boarder of the Fire District and continue as the Pascoag River.This river flows eastward and is joined by Nipmuc River and Herring Brook to its confluence with the Branch River in Oakland some distance east of Pascoag.

The topography of the Pascoag Fire District varies from gently rolling to hilly, and land elevations vary from a low of about 365' along the Pascoag River to a high elevation of 770' in the Pulaski Memorial State Forest. Most of the more prominent hills are located in the western portions of the Fire District and include; Benson Mountain 760', Badger Mountain 734' and Buck Hill 738'. In the western sections of the Fire District the land elevations are generally above 600' whereas in the eastern sections elevations range between 400' to 500'.

The broad, water rich valley formed by the Pascoag Reservoir, Wilson Reservoir and the Clear River has had a significant impact on the village of Pascoag and its historic development as a textile area.

Pascoag is served by two state highways, Rhode Island State Route 100 from the northwest and 107 from the east. Route 100 connects to U. S. Route 44 to the south. U. S. Route 44 is a multi-lane highway that runs from Hartford, Connecticut to Providence, Rhode Island, and is the only major highway serving this area. The nearest location for major rail and air service to most points is from the Providence area which is about 25 miles distant. The street pattern in Pascoag resembles village type of development, with country roads radiating away from the central business district. Harrisville is the nearest population center to Pascoag and has developed as a textile village or neighborhood.

The Town of Burrillville has a zoning ordinance which is being updated by the Rhode Island Department of Community Affairs. The zoning ordinance divides the town into four basic categories:

residential, commercial, industrial and farming. These categories are further subdivided in the following manner:

TABLE I

	District	Lot Size (sq. ft.)
R-10	Residence District	
	Single Family Dwelling	10,000
	Two Family Dwelling	12,000
R-10A	Residence District	
	Single Family Dwelling with water and sewer	10,000
	Single Family Dwelling no water and sewer	20,000
	Two Family Dwelling with water and sewer	12,000
	Subject to density requirements	
R-20	Residence District	
	Single Family Dwelling	20,000
R-40	Residence District	
	Single Family Dwelling	40,000
R-40A	Residence District	
	Single Family Dwelling Subject to soil analysis	40,000
F	Farming District	
	Single Family Dwelling	2 Acres
	With Farming or animal raising	5 Acres
	Commercial District	None
	Industrial District Subject to side line & front line regulations	None

It is the long range plan of the Town to provide orderly and efficient community growth with the zoning ordinance that is now in force.

4. HYDROLOGY

The climate of the Pascoag area, like that of other parts of coastal New England, is influenced by the proximity of the Atlantic Ocean. In general, periods of extreme heat or cold are of short duration,as the influence of the nearby Atlantic Ocean moderates changes in temperature over the land. Monthly precipitation for a period of years is more or less evenly distributed, although occasional periods of excessive moisture or drought will occur. Monthly and yearly averages of rainfall for the local area from 1915-1974 based on the Scituate watershed which is just south of the study area, are as shown in Table 2.

The average precipitation over the basin is about 48 inches distributed rather uniformly throughout the year. The range between maximum and minimum values of average monthly rainfall is only about one to two inches.

The average annual temperature is about 49°F. January and February are the coldest months, and July and August are the warmest. Average monthly temperatures vary widely throughout the year, from between 20°F and 30°F in January and February to between 68°F and 73°F in July and August. Extremes in temperature range from highs slightly in excess of 100°F to infrequent lows in the minus "twenties." The annual snowfall averages from 35 to 40 inches with extremes ranging from 30 inches in the Providence area and 60" in the Worcester area.

TABLE 2

MONTHLY AND YEARLY RAINFALL *

	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
Year 1974	4.83	3.39	5.83	3.74	3.37	2.78	1.29	3.95	7.44	3.68	1.98	6.52	48.80
(1915-74) 50 yr. avg.	4.05	3.96	4.48	4.16	3.62	3.57	3.74	4.20	4.13	3.59	4.77	4.46	48.73
Maximum	8.81	6.88	9.33	7.56	9.36	8.62	11.49	12.75	11.75	11.48	10.48	10.93	67.46
Minimum	.74	1.82	1.42	.89	.94	.10	.75	1.33	.20	.21	.48	.72	33.43

* In inches

TABLE NO. 3

MEAN MONTHLY SNOWFALL

	PROVIDENCE Snowfall, Inches	WORCESTER Snowfall, Inches
Jan.	10.0	14.9
Feb.	11.0	15.8
Mar.	8.0	10.2
April	.9	3.2
May	0	0
June	0	0
July	0	0
Aug.	0	0
Sept.	0	0
Oct.	.1	.1
Nov.	1.2	3.0
Dec.	5.6	10.1
ANNUAL	36.8	57.3

Stream Flow. The streams within Pascoag in which there is the greatest interest insofar as this report is concerned, are the Clear River and the Pascoag River. The Clear River has its source adjacent to Wallum Lake near the Massachusetts border and flows in a southeasterly direction to join with and become the Pascoag River in Pascoag, and continue to its confluence with the Branch River in Oakland.

A study was made to determine the safe yield of the "River System" at the Pascoag well fields. The rivers are also joined by Mowry Brook at their junction in the well field basin. The watershed areas at these locations are as follows:

TABLE 4

WATERSHED AREAS

	Location	Drainage Area
1.	Clear River at Wilson Reservoir	9.25 Sq. Mi.
2.	Pascoag River at Pascoag Reservoir	8.25 Sq. Mi.
3.	Mowry Brook	3.00 Sq. Mi.
	Total Drainage Area	20.50 Sq. Mi.

"Stream Flow Safe Yield" is generally considered as the quantity of run-off in a stream which may be assured 95% percent of the time. The U. S. Geological Survey maintains and operates a gaging station on the Nipmuc River near Harrisville. The drainage area for this river is 16 square miles and abuts the study area. The characteristics of the Nipmuc River watershed are very similar to the study area. The U. S. Geological Survey has determined that the 95 percent probable flow of the Nipmuc River from records kept since 1964 are as follows:

TABLE 5

LOW STREAM FLOW

FLOW DURATION	FLOW (CFS)	FLOW CFS/SQ.MI.
1 Day	.136	.00975
3 Day	.201	.01256
7 Day	.292	.01825

A comparative analysis of the safe yields and flows for the study area water sheds is accomplished by proportioning the areas and corresponding flows in the following manner:

TABLE 6

"SAFE YIELD STREAM FLOW"

Flow Duration	Nipmuc River Gaged Flow C.F.S./Sq.Mi.	Pascoag River Proportioned Flow (8.25 Sq. Mi.)	Clear River Proportioned Flow (9.25 Sq. Mi.)	Confluence at Mowry Brook (20.5 Sq. Mi.)
1 Day	.00975 CFS	.08 CFS	.09 CFS	.20 CFS
3 Day	.01256 CFS	.10 CFS	.12 CFS	.26 CFS
7 Day	.01825 CFS	.15 CFS	.17 CFS	.37 CFS

It can be seen from Table 6 that the seven day low stream flow is equal to .37 C.F.S. or 2.76 gallons per second. This is equal to 165 gallons per minute.

The flow within drainage areas of the Clear River and Pascoag River are somewhat attenuated by the dams that form the Pascoag and Wilson Reservoirs, also underflow at the dam locations could be cut off to a large degree due to the soil formation at the dams and subsequent siltation of the reservoirs. It is possible, therefore, during dry weather, for the Pascoag well field to experience draw from ground storage almost exclusively. In order to provide adequate recharge the reservoirs would have to discharge a small amount of water to maintain a minimum stream flow. It is not uncommon for river flow to perch on a somewhat impervious river bottom and contribute only a small portion of flow to recharge of ground water.

Several sets of data are available concerning stream flow from the Wilson Reservoir, the Pascoag Reservoir, and from Mowry Brook. These data indicate that during low flow in 1968, flow was measured as 5.43 M.G.D. from Wilson Reservoir, 1.94 M.G.D. from the Pascoag Reservoir, and Mowry Brook was dry. The foregoing information was obtained from miscellaneous low flow reading conducted by the United States Geologic Survey. Other data obtained from the Rhode Island Water Resources Board indicates that at one time flows into the Wilson Reservoir were measured at 3.82 M.G.D. and flow out of the Pascoag Reservoir was measured at 1.42 M.G.D.; Mowry Brook was dry.

Long time residents of Pascoag have seen the Clear River leading from the Wilson Reservoir dry from time to time. In addition to this there appears to be an unexplained partial loss of stream flow after the confluence of the Clear River and Pascoag River. Thus, conflicting data and information from residents of Pascoag seem to indicate a somewhat unreliable stream flow from time to time.

In light of the available data it would appear that the man-made structures at the Wilson and Pascoag Reservoirs can and do effect the stream flow in the vicinity of the Pascoag well field. During an extended drought residents along the Reservoir shoreline areas would be inclined to retain as much water at the dams as possible and cut off any downstream flow. This would prohibit stream flow from recharging the well field. The well system would then have to depend on underflow into and through the stratified drift of the well field, and/or stored water in the stratified drift and till composing the ground water reservoir.

Water stored in the stratified drift and till provides the storage for the well supply to draw from during periods of low flow or no flow. If one square mile of stratified drift were available to store water for the Pascoag well field, it could theoretically produce up to .8 M.G.D.

The area available for storage of water in the stratified drift is somewhat smaller than one square mile, and boundary conditions prohibit full utilization of this stored water. A conservative estimate for well field production based solely on storage might be in the order of .2 M.G.D. This would probably result in partial loss of stream flow.

Underflow to the well field from the drainage areas would arrive at the well field slowly through the till and more rapidly through the well sorted outwash areas. If it is assumed that the cross sectional area contributing to the well field is roughly 40 feet in depth and 1500 feet in width, a theoretical underflow of about 300,000 gallons/day or .3 M.G.D. could be realized. This flow would be in addition to the .23 M.G.D. already used by the Pascoag Fire District. The safe yield of the well field does not entirely depend on low stream flow or lack of it per se, but it can rely on storage and underflow during an extremely dry period, and in fact is supplied in this manner during normal flow conditions. The Pascoag well field can rely on water for safe yield in three basic manners: 1, stream flow; 2, underflow; 3, storage. Low stream flow will contribute about 200,000 gallons per day or .2 M.G.D.; underflow will contribute about 300,000 gallons per day or .3 M.G.D.; and 200,000 gallons per day or

.2 M.G.D. could be withdrawn from storage. Essentially, the aquifer at the well field could produce an additional .5 M.G.D. from a properly designed well or well field. Well water production of this magnitude plus existing well water production could cause the Pascoag River to dry completely during a prolonged drought period.

The development of new well water supplies for the Pascoag area has been somewhat complicated by the fact that many potential well sites have been ruled out due to man made physical constraints such as homes and buildings. Also, the installation of Pascoag's Well No. 3 met with a considerable amount of difficulty due to boulders and large rocks at lower elevations in the aquifer. These facts may limit the installation of future wells and the full potential of the aquifer may not be able to be realized.

5. SURFICIAL GEOLOGY

The study area lies within the seaboard lowland section of the New England Physiographic Province in a region of moderate but sharp relief and broad valleys. The topography and the surficial geology of the general region is the result of long continued pre-glacial erosion and deposition. The area is to a large degree bedrock controlled. The general character of the area is largely the result of the pre-Wisconsin stream erosion modified by the erosional and depositional effects of glaciation.

The positions, shapes, and orientations of the major hills and valleys are in large measure controlled by the structure and lithology of the underlying bedrock.

Fluvioglacial ice contact deposits are those in which the materials were deposited against the ice by glacial meltwater streams. The ice in most cases is believed to have been stagnated or nearly so. The deposits are largely of sand and gravel with minor amounts of silt and clay.

The Pascoag River, a meltwater stream, together with its tributaries, constitute the sub-regional area drainage, and it is this river which is of main importance in relation to the available ground water resources for the Pascoag Fire District.

The Pascoag River is superimposed on glacial drift which buries its pre-glacial channel. Materials derived from test wells installed along several reaches of the river indicate sand and gravel deposits.

Surficial or overburden materials in the area consist of two types of glacial drift, till, and outwash. Generally, the till will be found in the higher areas forming a relatively thin mantle over the bedrock. Near surface bedrock and outcrops are prevalent in the higher and a few low-lying areas. The outwash materials are predominantly a combination of gravel, sand, and small rocks.

The accumulation of these materials is generally thin - for the most part 50 feet or less. The penetration in the Pascoag well field is about 40'-55' in depth to bedrock. Penetrations in this area seem to reach refusal at about the 55' level below ground surface with many large and small rocks at the lower elevations making test well drilling difficult.

With few exceptions, the material encountered throughout the several test well programs has been sand and gravel,fine sand, silt, and till. The underlying metamorphic and ignious bedrock does not support productive deep drilled wells. Insofar as the construction of a water distribution system, the surficial geology presents no special problem.

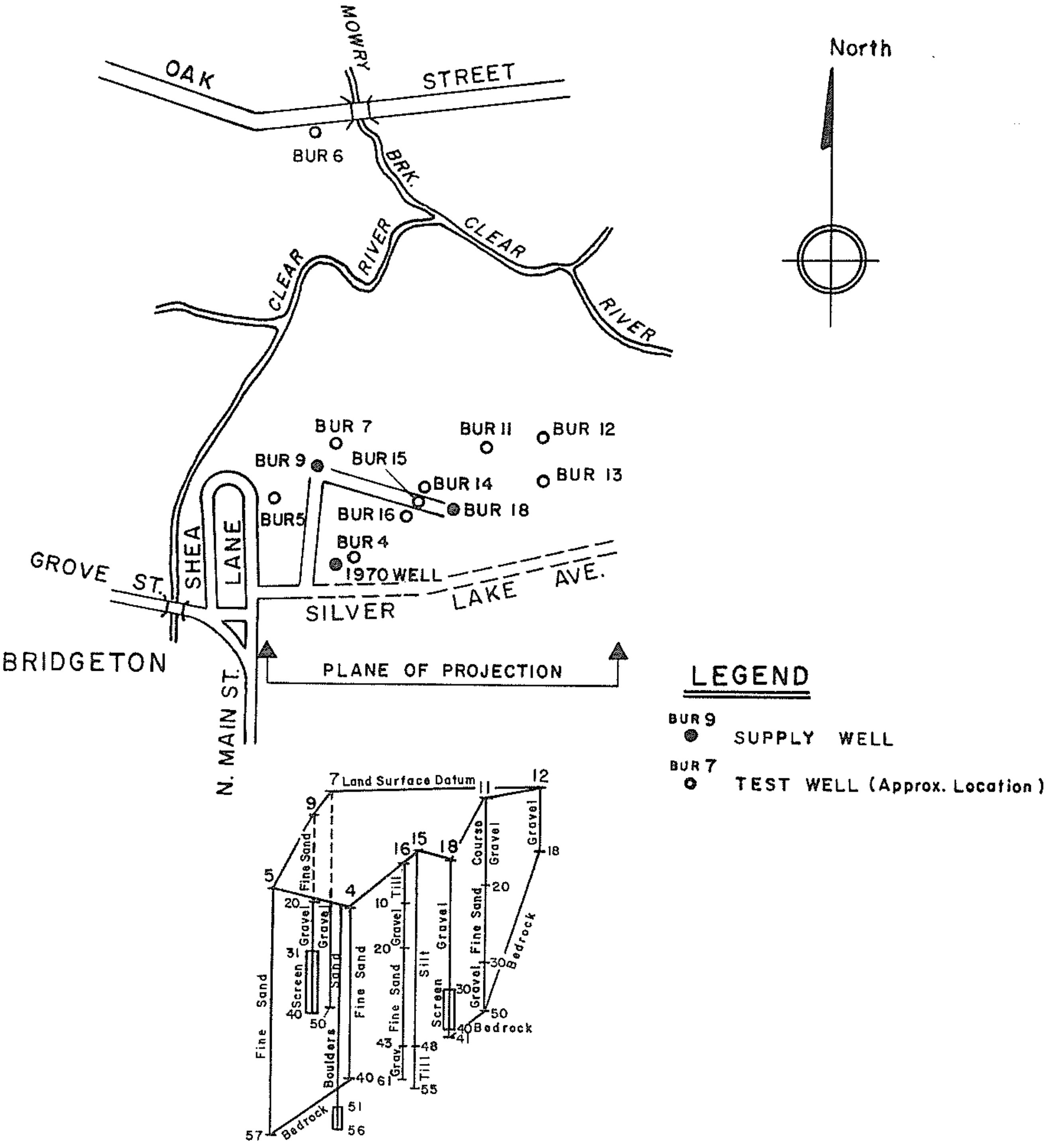
Plate II indicates the most favorable ground water withdrawal conditions throughout the study area. For the most part the areas outlined are formed by well sorted glacial drift.

Plate IV illustrates a 3-dimensional view of the existing Pascoag Fire District well field. The glacial materials are shown on this drawing, together with the depths at which the deposits were encountered.

Several other glacial outwash deposits are located within the Fire District but are quite remote from the existing Pascoag water service area. These areas are the Wakefield and Keach Pond basins.

Due to the extent of the State owned and operated management of acreage in and around these glacial deposits, it is unlikely that water service from these aquifers would ever be practical.

The surficial geologic formations within the Fire District's service area is of utmost importance for the withdrawal of large quantities of water for municipal water service.



THREE DIMENSIONAL DIAGRAM OF WELL FIELD

KEYES

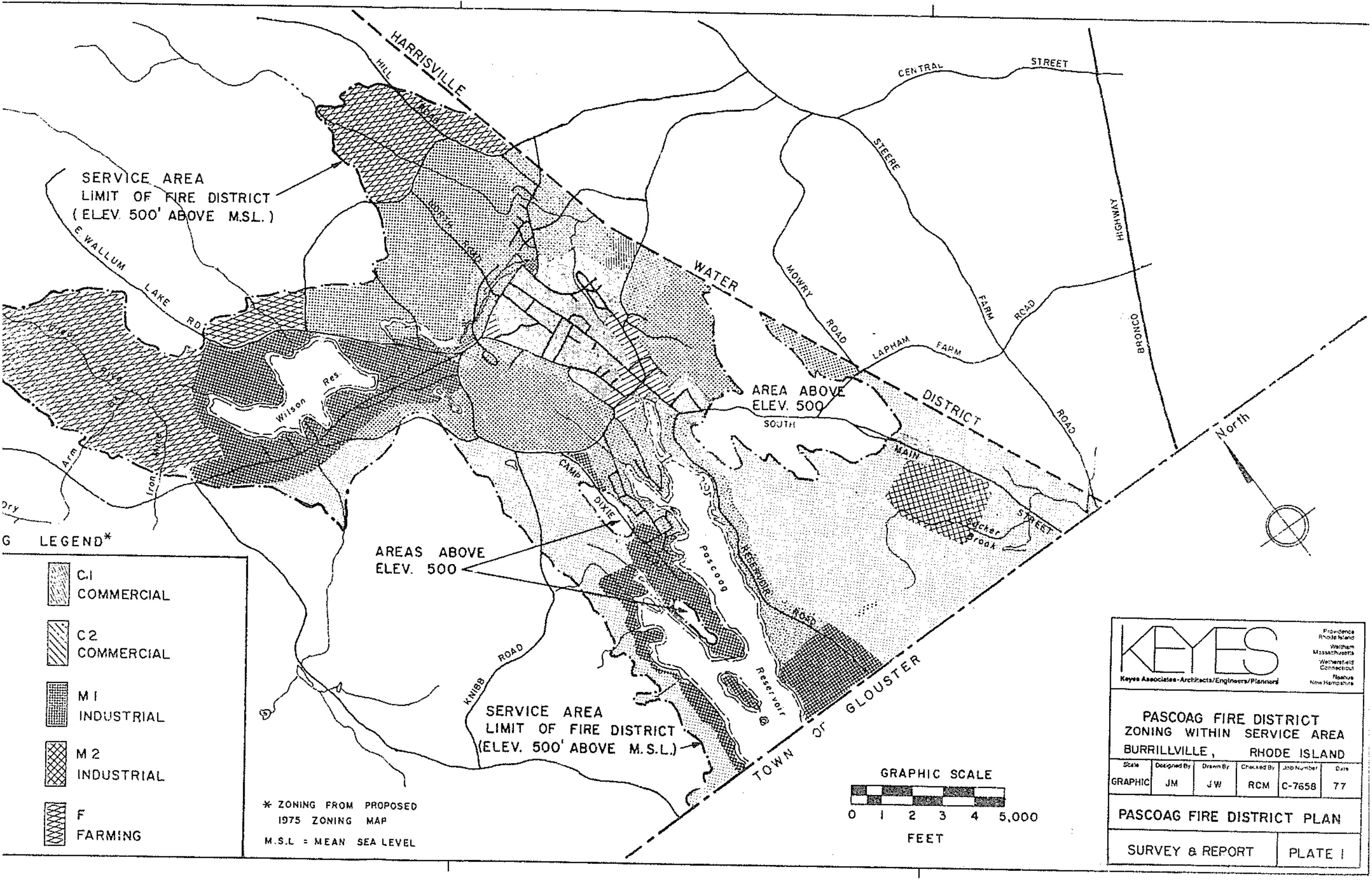
Providence, R.I.
Waltham, Mass.
Wethersfield, Ct.
Nashua, N.H.

Keyes Associates–Architects/Engineers/Planners

WELL FIELD DIAGRAM

Date	4/77	Drawn By	B. G.	Job Number	C-7658	PLATE IV

P.B.P. 3512



KEYES

Keyes Associates-Architects/Engineers/Planners

Providence Rhode Island
Waltham Massachusetts
Wethersfield Connecticut
Nashua New Hampshire

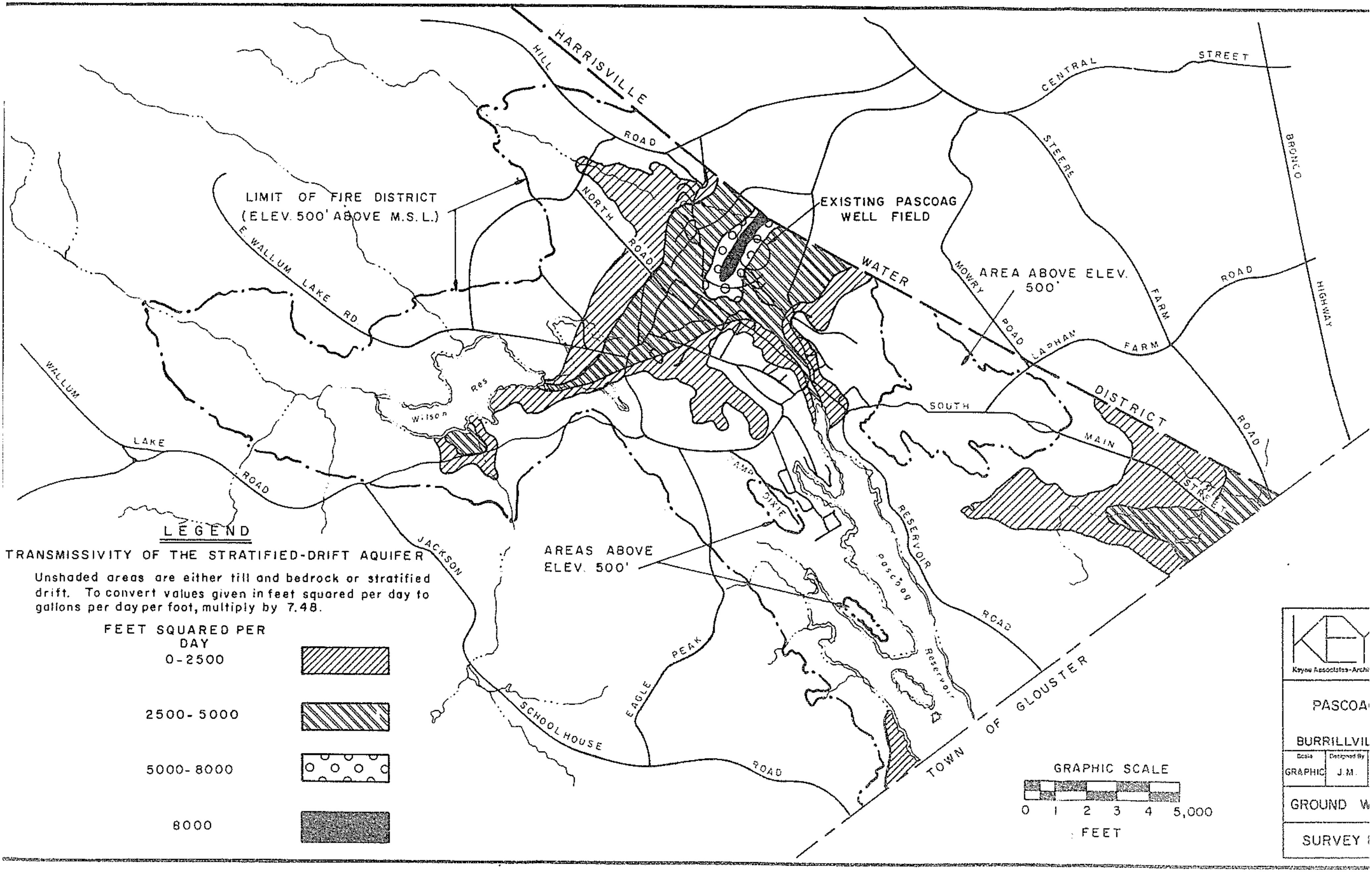
PASCOAG FIRE DISTRICT
ZONING WITHIN SERVICE AREA
BURRILLVILLE, RHODE ISLAND

Scale	Designed By	Drawn By	Checked By	Job Number	Date
GRAPHIC	JM	JW	RCM	C-7658	77

PASCOAG FIRE DISTRICT PLAN

SURVEY & REPORT

PLATE I



LEGEND

TRANSMISSIVITY OF THE STRATIFIED-DRIFT AQUIFER

Unshaded areas are either till and bedrock or stratified drift. To convert values given in feet squared per day to gallons per day per foot, multiply by 7.48.

FEET SQUARED PER DAY	
0-2500	▨
2500-5000	▧
5000-8000	○
8000	■

B.3 HydroSource Associates, Inc. Well Report

MOBILE GEOCHEMISTRY
H&P

February 21, 2006

Mr. Mike Cote
RIDEM
235 Promenade Street
Providence, RI 02908

SUBJECT: DATA REPORT – SUMMER STREET - PASCOAG, RI - RIDEM PROJECT #LS-0329

H&P Project # MC021306-11

Mr. Cote:

Please find enclosed a data report for the above referenced location. Vapor samples were analyzed in H&P's TO-15 laboratory.

Project Summary

The following analyses were conducted:

- 4 vapors for volatile organic compounds (VOCs) by EPA Method TO-15

The samples were received in appropriate containers with appropriate labels, seals, and chain-of-custody documentation.

Project Narrative

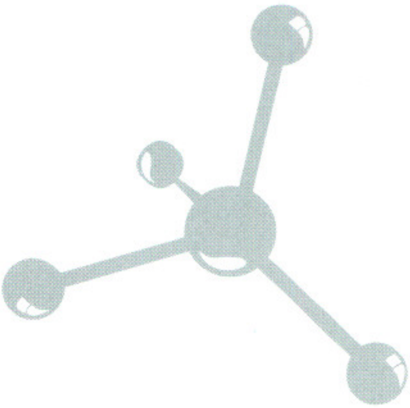
The results for all analyses and required QA/QC analyses are summarized in the enclosed tables. All calibrations, blanks, surrogates, and spike recoveries fulfill quality control criteria.

H&P Mobile GeoChemistry appreciates the opportunity to provide analytical services to RIDEM on this project. If you have any questions relating to this data or report, please do not hesitate to contact us.

Sincerely,

Blayne Hartman

Dr. Blayne Hartman



432 North Cedros Avenue, Solana Beach, California 92075 | 858 793.0401 — Fax 858 793.0404
148 South Vinewood Street, Escondido, California 92029 | 760 735.3208 — Fax 760 735.2469
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MOBILE GEOCHEMISTRY
H&P

RIDEM
235 Promenade Street
Providence RI, 02908

Project: MC021306-11
Project Number: LS-0329
Project Manager: Mr. Mike Cote

Reported:
21-Feb-06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VP-4	E602055-01	Vapor	09-Feb-06	10-Feb-06
VP-21	E602055-02	Vapor	09-Feb-06	10-Feb-06
VP-5	E602055-03	Vapor	09-Feb-06	10-Feb-06
VP-22	E602055-04	Vapor	09-Feb-06	10-Feb-06

RIDEM
235 Promenade Street
Providence RI, 02908

Project: MC021306-11
Project Number: LS-0329
Project Manager: Mr. Mike Cote

Reported:
21-Feb-06

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

VP-4 (E602055-01) Vapor Sampled: 09-Feb-06 Received: 10-Feb-06

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Methyl tert-butyl ether	10	5.0	ug/m³ Air	1	EB61401	14-Feb-06	14-Feb-06	EPA TO-15	
Benzene	20	5.0	"	"	"	"	"	"	
Toluene	46	5.0	"	"	"	"	"	"	
Ethylbenzene	10	5.0	"	"	"	"	"	"	
m,p-Xylene	20	5.0	"	"	"	"	"	"	
o-Xylene	15	5.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.9 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*97.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.6 %*	*80-120*		"	"	"	"	

VP-21 (E602055-02) Vapor Sampled: 09-Feb-06 Received: 10-Feb-06

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Methyl tert-butyl ether	5.8	5.0	ug/m³ Air	1	EB61401	14-Feb-06	14-Feb-06	EPA TO-15	
Benzene	11	5.0	"	"	"	"	"	"	
Toluene	61	5.0	"	"	"	"	"	"	
Ethylbenzene	13	5.0	"	"	"	"	"	"	
m,p-Xylene	26	5.0	"	"	"	"	"	"	
o-Xylene	20	5.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.7 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*96.7 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*	*80-120*		"	"	"	"	

VP-5 (E602055-03) Vapor Sampled: 09-Feb-06 Received: 10-Feb-06

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Methyl tert-butyl ether	8.8	5.0	ug/m³ Air	1	EB61401	14-Feb-06	14-Feb-06	EPA TO-15	
Benzene	14	5.0	"	"	"	"	"	"	
Toluene	39	5.0	"	"	"	"	"	"	
Ethylbenzene	9.7	5.0	"	"	"	"	"	"	
m,p-Xylene	19	5.0	"	"	"	"	"	"	
o-Xylene	14	5.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.0 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*96.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.7 %*	*80-120*		"	"	"	"	

RIDEM
235 Promenade Street
Providence RI, 02908

Project: MC021306-11
Project Number: LS-0329
Project Manager: Mr. Mike Cote

Reported:
21-Feb-06

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-22 (E602055-04) Vapor Sampled: 09-Feb-06 Received: 10-Feb-06									
Methyl tert-butyl ether	6.5	5.0	ug/m³ Air	1	EB61401	14-Feb-06	14-Feb-06	EPA TO-15	
Benzene	67	5.0	"	"	"	"	"	"	
Toluene	83	5.0	"	"	"	"	"	"	
Ethylbenzene	13	5.0	"	"	"	"	"	"	
m,p-Xylene	26	5.0	"	"	"	"	"	"	
o-Xylene	17	5.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.1 %*	*80-120*		"	"	"	"	
Surrogate: Toluene-d8		*98.4 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.1 %*	*80-120*		"	"	"	"	

RIDEM
235 Promenade Street
Providence RI, 02908

Project: MC021306-11
Project Number: LS-0329
Project Manager: Mr. Mike Cote

Reported:
21-Feb-06

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61401 - Vapor										
Blank (EB61401-BLK1)				Prepared & Analyzed: 14-Feb-06						
Dichlorodifluoromethane	ND	5.5	ug/m^3 Air							
Vinyl chloride	ND	5.0	"							
Chloroethane	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,1-Dichloroethene	ND	5.0	"							
1,1,2-Trichlorotrifluoroethane	ND	6.0	"							
Methylene chloride	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
Methyl tert-butyl ether	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
Chloroform	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
Benzene	ND	5.0	"							
Carbon tetrachloride	ND	5.5	"							
Trichloroethene	ND	5.0	"							
Toluene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
o-Xylene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	6.0	"							
Surrogate: 1,2-Dichloroethane-d4	*102*		*"*	*103*		*99.0*	*80-120*			
Surrogate: Toluene-d8	*94.2*		*"*	*96.2*		*97.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*141*		*"*	*182*		*77.5*	*80-120*			*S-GC*

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61401 - Vapor										
LCS (EB61401-BS1)				Prepared & Analyzed: 14-Feb-06						
Dichlorodifluoromethane	121	5.5	ug/m^3 Air	101		120	65-135			
Vinyl chloride	52.3	5.0	"	71.8		72.8	65-135			
Chloroethane	53.9	5.0	"	53.8		100	65-135			
Trichlorofluoromethane	128	5.0	"	113		113	65-135			
1,1-Dichloroethene	90.3	5.0	"	80.8		112	65-135			
1,1,2-Trichlorotrifluoroethane	182	6.0	"	155		117	65-135			
Methylene chloride	79.9	5.0	"	70.8		113	65-135			
trans-1,2-Dichloroethene	87.3	5.0	"	80.8		108	65-135			
Methyl tert-butyl ether	76.0	5.0	"	73.4		104	65-135			
1,1-Dichloroethane	91.8	5.0	"	82.4		111	65-135			
cis-1,2-Dichloroethene	84.3	5.0	"	80.2		105	65-135			
Chloroform	108	5.0	"	99.4		109	65-135			
1,1,1-Trichloroethane	119	5.0	"	111		107	65-135			
1,2-Dichloroethane	85.3	5.0	"	82.4		104	65-135			
Benzene	68.8	5.0	"	65.0		106	65-135			
Carbon tetrachloride	137	5.5	"	128		107	65-135			
Trichloroethene	116	5.0	"	109		106	65-135			
Toluene	79.5	5.0	"	76.8		104	65-135			
1,1,2-Trichloroethane	107	5.0	"	111		96.4	65-135			
Tetrachloroethene	141	5.0	"	138		102	65-135			
Ethylbenzene	81.9	5.0	"	88.4		92.6	65-135			
m,p-Xylene	83.6	5.0	"	88.4		94.6	65-135			
o-Xylene	77.8	5.0	"	88.4		88.0	65-135			
1,1,2,2-Tetrachloroethane	82.1	6.0	"	140		58.6	65-135			Ql-1L
Surrogate: 1,2-Dichloroethane-d4	*98.5*		*"*	*103*		*95.6*	*80-120*			
Surrogate: Toluene-d8	*93.9*		*"*	*96.2*		*97.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*178*		*"*	*182*		*97.8*	*80-120*			

RIDEM
235 Promenade Street
Providence RI, 02908

Project: MC021306-11
Project Number: LS-0329
Project Manager: Mr. Mike Cote

Reported:
21-Feb-06

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
Ql-1L	The LCS and/or LCSD recoveries fell below the established control specifications for this analyte. Any result for this compound is qualified and should be considered an estimate only.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY
H&P

Chain of Custody Record

☐ 148 S. Vinewood St., Escondido, CA 92029 • ph 760.735.3208 • fax 760.735.2469
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☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 2/9/06
H&P Project # MCO21006-30
M[illegible]-11
Outside Lab:

Client: RIDEM
Address: 235 Promenade Street
Providence, RI 02908
Phone: (401) 222-2797 Fax: (401) 222-3813

Collector: Mike Cote
Page: 1 Of 1
Client Project # LS-0329
Project Manager Mike Cote
Location: Summer Street, Pascoag, RI
Turn around time:

Global ID:
EDF: Yes / No

Sample Receipt
Intact: ☐ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☐ N/A
Cold: ☐ Yes ☐ No
N/A (Received on Site)

Sample Name	Field Point Name	(Ft) Depth	Time	Date	Sample Type	Container Type	TPH gasoline / diesel	TPH extended	8021 for BTEX/MTBE	8021 for Halogenated compounds	418.1 TRPH	8260B				Methane	Fixed Gases	TO-15 ([illegible])						Total # of containers
												BTEX / Oxygenates	Oxygenates	VOC's	VOC's and Oxygenates									
VP-~~3~~4	MOS 0~~3~~4	3.5	11:42	2/9/06	Soil Vapor	Tedlar						X						X						1
VP-21	MOS 21	4.5	11:30	2/9/06	Soil Vapor	Tedlar						X						X						1
VP-~~0~~5	MOS 0~~6~~5	3.5	11:52	2/9/06	Soil Vapor	Tedlar						X						X						1
VP-22	MOS 22	4.0	11:00	2/9/06	Soil Vapor	Tedlar						X						X						1

Relinquished by: (Signature) Michael Cote 2-9-06	(company)	Received by: (Signature)	(company) H&P	Date: 2/10/06	Time: 1200
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

MOBILE GEOCHEMISTRY
H&P

25 July 2006

Mr. Mike Cote
RIDEM
235 Promenade Street
Providence, RI 02908
RE: MC072106-14

Enclosed are the results of analyses for samples received by the laboratory on 21-Jul-06 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rebecca L Johnson for

Tamara Davis
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 1839, 2088, 2278, 2530, 2543, 2579 and 2595.

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3825 Industry Avenue, Lakewood, California 90712 562.426.6991 — Fax 562.426.6995
www.HandPmg.com 1-800-834-9888

RIDEM 235 Promenade Street Providence RI, 02908	Project: MC072106-14 Project Number: LS-0329 / Pascoag, RI Project Manager: Mr. Mike Cote	Reported: 25-Jul-06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VP-25	E607058-01	Vapor	20-Jul-06	21-Jul-06
VP-26	E607058-02	Vapor	20-Jul-06	21-Jul-06
VP-27	E607058-03	Vapor	20-Jul-06	21-Jul-06
VP-60	E607058-04	Vapor	20-Jul-06	21-Jul-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-25 (E607058-01) Vapor Sampled: 20-Jul-06 Received: 21-Jul-06									
Methyl tert-butyl ether	ND	1.0	ug/l	0.1	EG62405	21-Jul-06	21-Jul-06	EPA 8260B	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*120 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*75-125*		"	"	"	"	
VP-26 (E607058-02) Vapor Sampled: 20-Jul-06 Received: 21-Jul-06									
Methyl tert-butyl ether	ND	1.0	ug/l	0.1	EG62405	21-Jul-06	21-Jul-06	EPA 8260B	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*114 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*115 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*75-125*		"	"	"	"	

RIDEM
235 Promenade Street
Providence RI, 02908

Project: MC072106-14
Project Number: LS-0329 / Pascoag, RI
Project Manager: Mr. Mike Cote

Reported:
25-Jul-06

Volatile Organic Compounds by EPA Method 8260B

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
VP-27 (E607058-03) Vapor Sampled: 20-Jul-06 Received: 21-Jul-06									
Methyl tert-butyl ether	ND	1.0	ug/l	0.1	EG62405	21-Jul-06	21-Jul-06	EPA 8260B	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*112 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*111 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*99.6 %*	*75-125*		"	"	"	"	
VP-60 (E607058-04) Vapor Sampled: 20-Jul-06 Received: 21-Jul-06									
Methyl tert-butyl ether	ND	1.0	ug/l	0.1	EG62405	21-Jul-06	21-Jul-06	EPA 8260B	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	1.0	"	"	"	"	"	"	
Benzene	ND	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Tert-butyl alcohol	ND	5.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*116 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*116 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*75-125*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B - Quality Control

H&P Mobile Geochemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EG62405 - EPA 5030										
Blank (EG62405-BLK1)				Prepared & Analyzed: 21-Jul-06						
Methyl tert-butyl ether	ND	1.0	ug/l							
Di-isopropyl ether	ND	1.0	"							
Ethyl tert-butyl ether	ND	1.0	"							
Tert-amyl methyl ether	ND	1.0	"							
Benzene	ND	1.0	"							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Tert-butyl alcohol	ND	5.0	"							
Surrogate: Dibromofluoromethane	*2.81*		*"*	*2.50*		*112*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2.78*		*"*	*2.50*		*111*	*75-125*			
Surrogate: Toluene-d8	*2.58*		*"*	*2.50*		*103*	*75-125*			

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

MOBILE GEOCHEMISTRY
H&P

2470 Impala Drive
Carlsbad, CA 92010

Chain of Custody Record

☐ 148 S. Vinewood St., Escondido, CA 92029 • ph 760.735.3208 • fax 760.735.2469
☐ 432 N. Cedros Ave., Solana Beach, CA 92075 • ph 858.793.0401 • fax 858.793.0404
☐ 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 07/20/06
H&P Project # HC072106-14
Outside Lab:

Client: RIDEM - Office of Waste Management
Address: 235 Promenade Street
Providence, RI 02908
Phone: (401) 222-2797 Fax: (401) 222-3813

Collector: Chris Walusiak
Client Project # LS-0329
Location: Pascoag, RI
Turn around time: Standard

Page: 1 Of 1
Project Manager Michael Cote

Global ID:
EDF: Yes / No

Sample Receipt

Intact: ☑ Yes ☐ No
Seal Intact: ☐ Yes ☐ No ☑ N/A
Cold: ☐ Yes ☑ No
N/A (Received on Site)

												8260B												
Sample Name	Field Point Name	Depth	Time	Date	Sample Type	Container Type	TPH gasoline / diesel	TPH extended	8021 for BTEX/MTBE	8021 for Halogenated compounds	418.1 TRPH	BTEX / Oxygenates	Oxygenates	VOC's	VOC's and Oxygenates	Methane	Fixed Gases							Total # of containers
VP-25	VP-25	5'	9:25	7/20/06	Soil Vapor	Tedlar						X												1
VP-26	VP-26	5'	9:40	↓	↓	Tedlar						X												1
VP-27	VP-27	3'	12:30	↓	↓	Tedlar						X												1
VP-60	VP-60	9'	9:50	↓	↓	Tedlar						X												1

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Chris Walusiak	RIDEM/OWM	Ann Kim (~~Fed E~~ US Mail)	H&P	7/21/06	11:48 am

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: ☐ *Disposal @ $2.00 each* ☐ *Return to client* ☐ *Pickup*

HydroSource Associates, Inc.
26 Winter St. · PO Box 609 · Ashland, NH 03217
telephone (603) 968-3733 · fax (603) 968-7605
e-mail: info@teamhydrosource.com · website: www.teamhydrosource.com

June 27, 2000

Rich Gotlieb, Chief Sanitary Engineer
Rhode Island Dept. of Health
Division of Drinking Water Quality
3 Capital Hill Avenue, Room 209
Providence, RI 02908-5097

Dear Rich:

I am glad that we had the opportunity to discuss Pascoag's new bedrock water supply concerns. I was not aware of your presumption that the Town would pursue approval of the bedrock well under the sand and gravel supply regulations.

On the contrary, it has and will continue to be the Town's position that the newly constructed well is a bedrock well, not a sand and gravel supply and, as such, RIDOH regulations governing bedrock water supply wells apply, and not RIDOH regulations pertaining to sand and gravel wells. Despite including a retainer screen (which was installed only as a precautionary measure to hold back bedrock clasts from entering the well), the new bedrock well falls under the RIDOH rules regulating bedrock water supplies for the following reasons:

1. The well derives its water solely from discrete fractures located in bedrock. By definition, this is a bedrock water supply well;
2. The well is separated and sealed from the overburden by a Furnco seal and steel casing installed within bedrock;
3. The well is sealed hydraulically from the overburden by a two-foot thick layer of impermeable lodgement till;
4. The overlying alluvial aquifer (as determined from numerous test and observation well logs) is not physically capable of transmitting groundwater at a 700 gpm pumping rate. (Historically, fully developed 18" x 24" and 12" x 18" gravel packed alluvial water supply wells located in the immediate area of the bedrock well yield instantaneous pumping rates of **only 100 to 150** gallons per minute (gpm), not 700 gpm);
5. The well possesses highly directional transmissivity and hydraulic properties which are not found in alluvial wells (as per pumping test data); and

6. The well derives recharge under linear flow rather than radial flow conditions (as per pumping test data).

We have supplied RIDOH with a great deal of evidence in the form of production well logs and well construction diagrams, pumping test information and additional alluvial production and monitoring well information concerning the limited transmissivity of the alluvial materials at the site.

Although I was not at the Pascoag Well informational meeting held at RIDOH due to previous work commitments out of country, I was informed by one of our hydrogeologists in attendance, Dr. Jim Vernon, that RIDOH has observed samples of the fractured bedrock material, the split spoon samples of the two-foot layer of impermeable, clay-rich lodgement till lying directly above the bedrock surface and the split spoon samples of fine, sandy materials comprising the bulk of the alluvial section of the hole. I was also informed that the results from the constant rate pumping test data were discussed during this meeting. A quick review of the pumping test data plots obtained from the observation well installed 55 feet from the new bedrock well should quickly clear up any apprehensions you may have about the new bedrock well deriving its water in the same manner as a sand and gravel water supply well. The pumping test data clearly show that drawdown in the observation well 55 feet away was essentially the same as that of the pumping well. The transmissivity of the aquifer surrounding the pumping and observation wells is essentially infinite; whereas maximum transmissivity values for the Pascoag alluvial aquifer as determined by the USGS are no more than 10,000 gallons per day per foot. It is physically impossible in a sand and gravel aquifer to have 36 feet of drawdown in the pumping well and the same amount of drawdown in an observation well located 55 feet away. It is, however, a normal occurrence in highly transmissive bedrock aquifers as directional transmissivity variations are the rule.

If, after reviewing the submitted data you still have any questions about the pedigree of this well, please contact me. I would also be happy to speak with any bedrock well expert you may proffer regarding this matter. I have taken the liberty of submitting material to Mr. David Dickerman of the USGS regarding this manner since he is the resident expert on the Harrisville/Pascoag area in Rhode Island.

Sincerely,

Joseph C Ingari

Joseph C. Ingari
Sr. Vice President

JCI:cw
cc:

ri:gotlieb.j27

Appendix C: Soil Vapor Intrusion Analytical Results

Appendix D: Treatment System

D.1 Extraction Well Logs (BETA-1 and BETA-2)

BETA GROUP, INC.	**SOIL BORING/MONITORING WELL REPORT**

PROJECT: Pascoag
LOCATION: 54-56 Summer Street, Pascoag, RI
DRILLING CO: Geosearch
EQUIPMENT: Mud-rotary truck-mounted ri
DRILLED BY: Rodney
INSPECTED BY: SJB

BORING/WELL NO. BETA-1
PAGE 1 OF 1
DATE STARTED: 1/26/2009
DATE FINISHED: 1/28/2009
SURFACE ELEVATION:
*Elevation based on assumed datum.

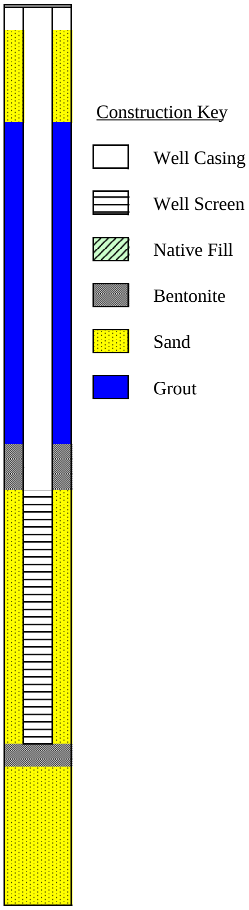
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	CORE BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
								Topsoil
								Well graded orange sand seen before drilling. Mud Rotary - No visible cuttings
10								
								Overburden
20								
								Bedrock/Boulder
								2' seam. Lost approximately 100 gallons of bio-degradable drilling mud.
30								
								Bedrock
40								Bottom of Boring
50								

MONITORING WELL CONSTRUCTION



Notes:
Well is 6-inches in diameter with a 3-foot stick-up. Screen constructed of stainless steel. Casing made of carbon steel.

BETA GROUP, INC.

SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: 54-56 Summer Street, Pascoag, RI
DRILLING CO: Geosearch
EQUIPMENT: Mud-rotary truck-mounted ri
DRILLED BY: Rodney
INSPECTED BY: SJB

BORING/WELL NO. BETA-2
PAGE 1 OF 1
DATE STARTED: 2/16/2009
DATE FINISHED: 2/16/2009
SURFACE ELEVATION:
*Elevation based on assumed datum.

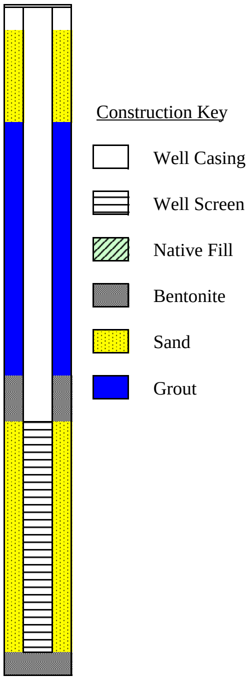
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	CORE BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

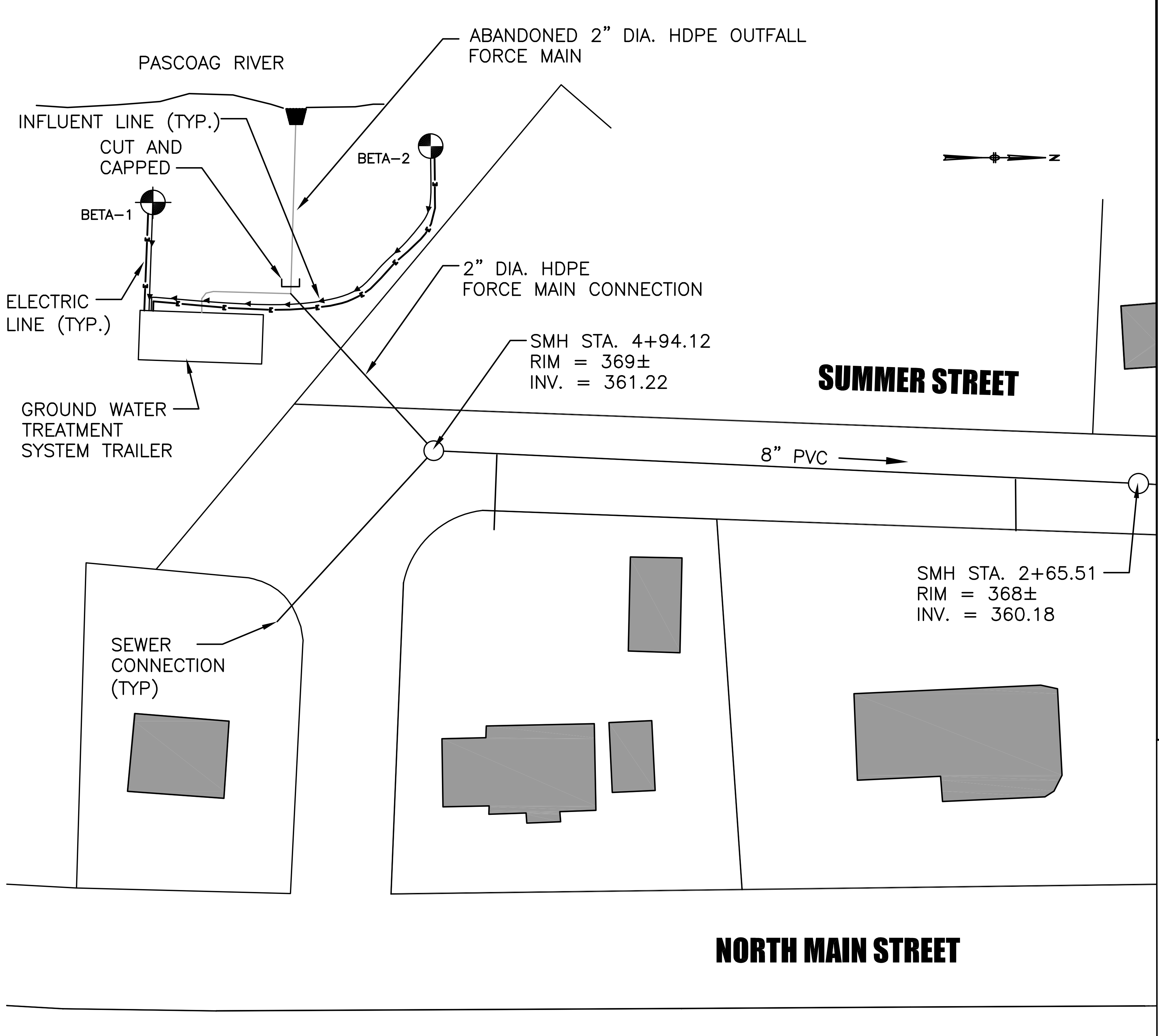
DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
								Topsoil
								Well graded orange sand seen before drilling. Mud Rotary - No visible cuttings
10								Overburden
								Boulders
20								Overburden
								Bedrock/Boulder
30								Bottom of Boring
40								
50								

MONITORING WELL CONSTRUCTION



Notes:
Well is 6-inches in diameter with a 3-foot stick-up. Screen constructed of stainless steel. Casing made of carbon steel.

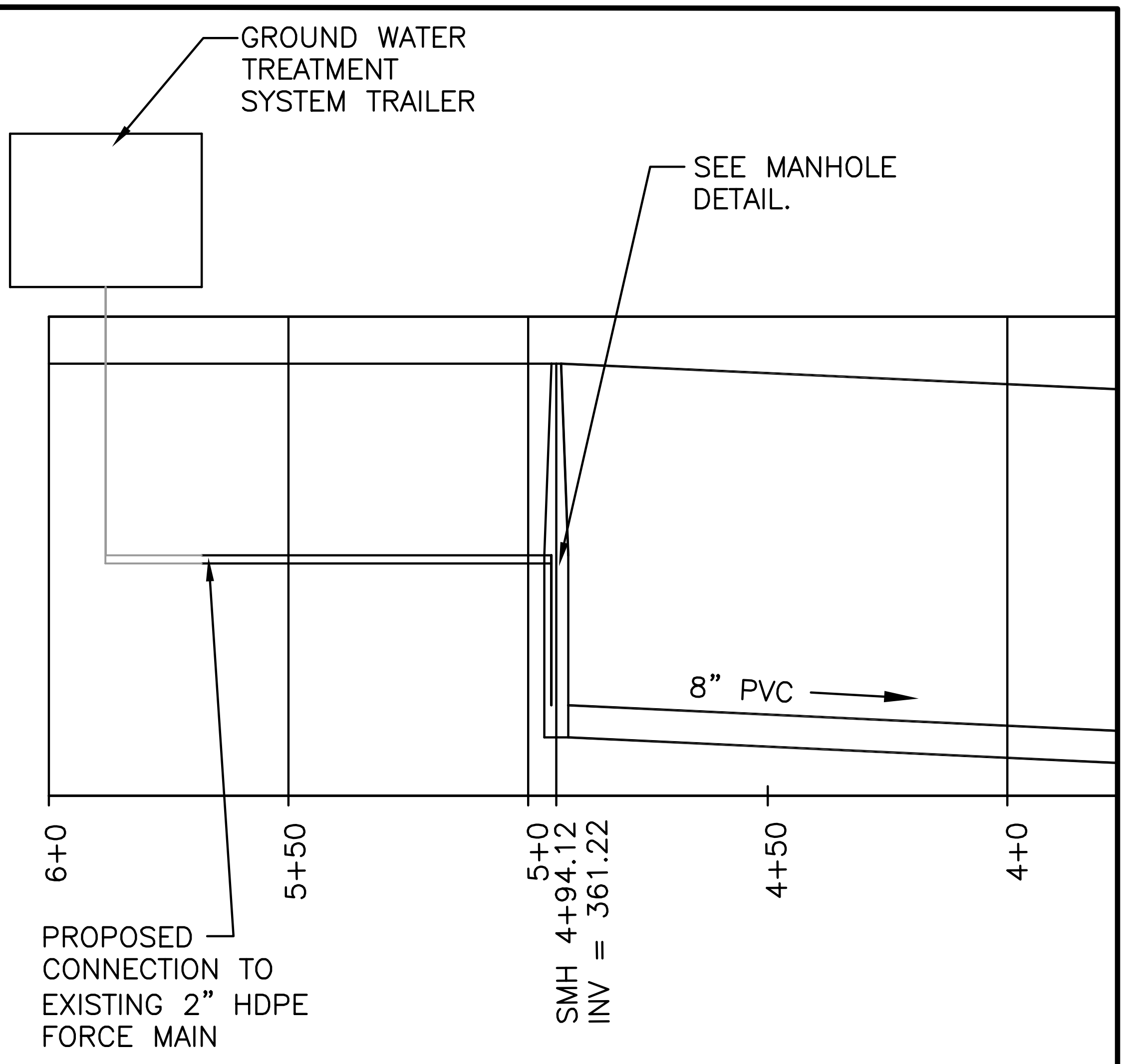
D.2 Treatment System Layout



NOTE: SEWER DATA AS SHOWN ON TOWN OF BURRILLVILLE "SEWER ASSESSMENT AND RECORD PLANS" DATED MAY 1980

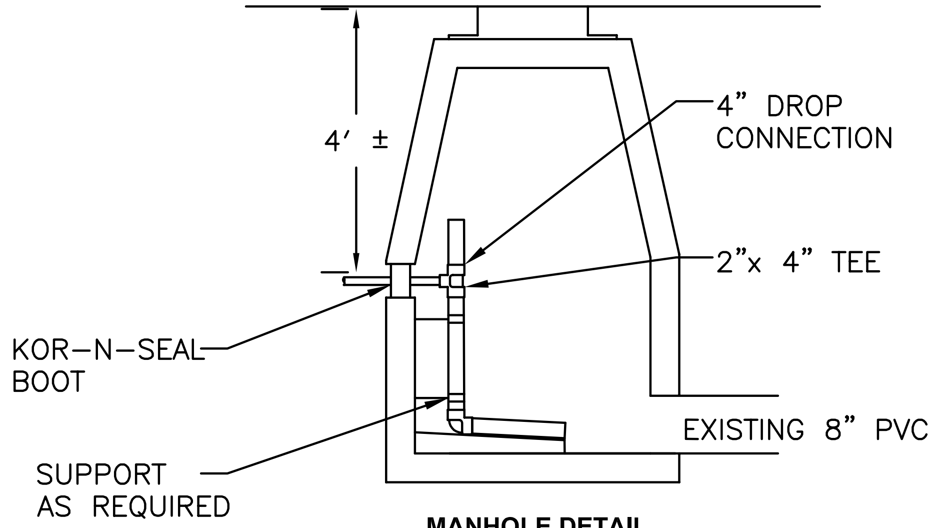
SEWER CONNECTION PLAN

SCALE: 1"=40'



SEWER CONNECTION PROFILE

HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



MANHOLE DETAIL

NOT TO SCALE

Not for Construction

NUMBER	DATE	MADE BY	CHECKED BY	DESCRIPTION

REVISIONS

DESIGNED BY:

CHECKED BY:

BETA Group, Inc.
Engineers·Scientists·Planners

6 Blackstone Valley Place
Lincoln, RI 02865
401.333.2382
email: BETA@BETA-inc.com

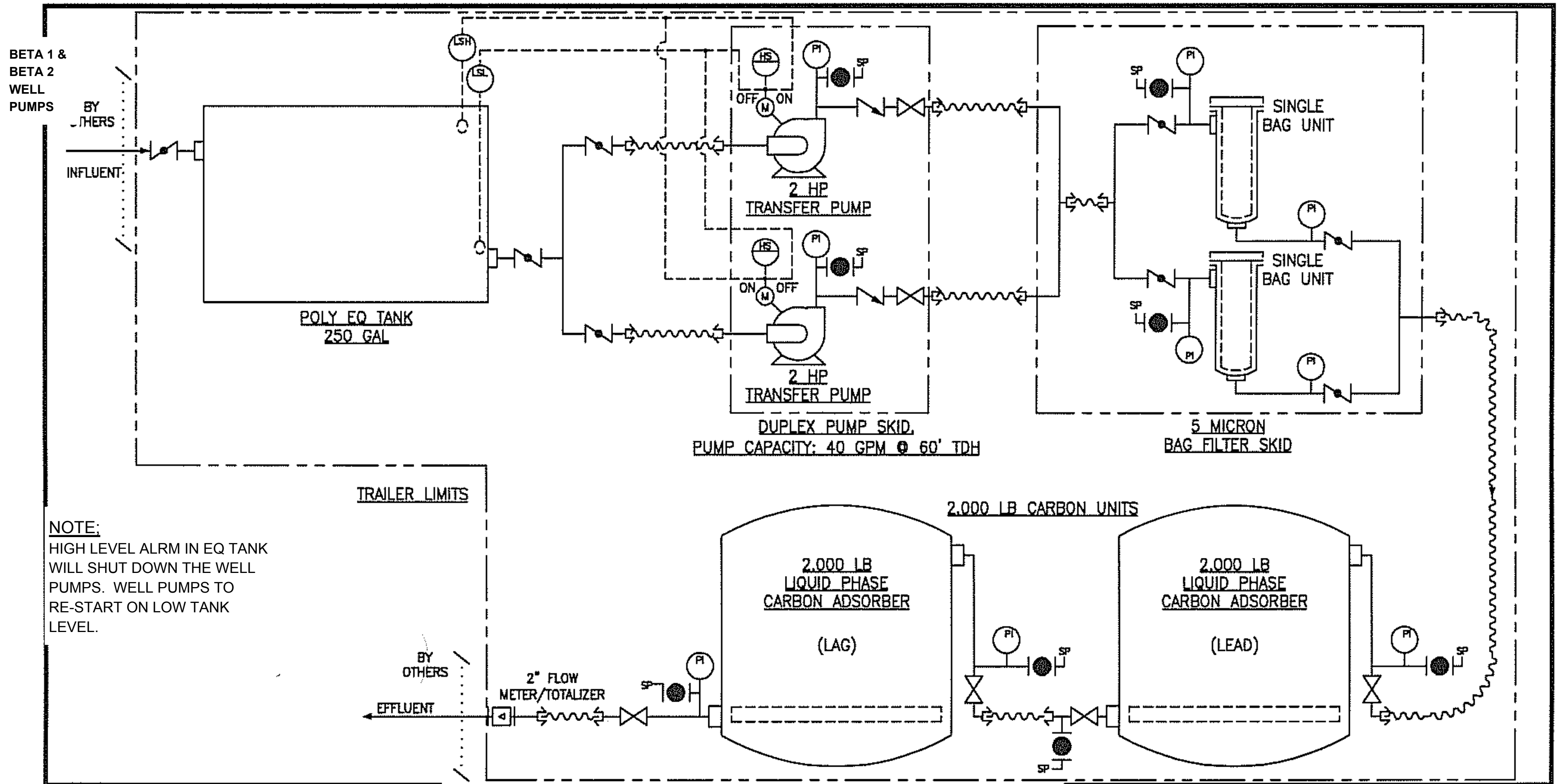
Scale:
AS NOTED
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

RIDEM GROUNDWATER TREATMENT SYSTEM
PROPOSED SEWER CONNECTION PLAN & PROFILE
PASCOAG, RI

JOB: 3649
PLOT DATE: Jul. 11, 2012
ISSUE DATE:
SHEET

K:\3649 - 3954 Pascoag\Drawings\O & M Site Plan.dwg

D.3 Treatment System Schematic



NOTE:

HIGH LEVEL ALRM IN EQ TANK WILL SHUT DOWN THE WELL PUMPS. WELL PUMPS TO RE-START ON LOW TANK LEVEL.

LEGEND

PROCESS PIPING
FLEXIBLE HOSE
FLOW DIRECTION
PIPE CROSS OVER
● BALL VALVE (NORMALLY CLOSE)
BUTTERFLY VALVE
CHECK VALVE
GATE VALVE (OPEN)
SP SAMPLE PORT
CAM LOCK COUPLING
PI PRESSURE GAGE
LEVEL FLOAT
M MOTOR
FLOW METER
LSL LEVEL SWITCH LOW
HS HAND OPERATED SWITCH

NO.	REVISIONS	DATE
A	PRELIMINARY DESIGN FOR REVIEW	02/27/08

PASCOAG, RI

10 GPM TEMPORARY
WATER TREATMENT SYSTEM

SCALE: NONE
DATE: 02/27/08
APPROVED: –
DRAWN BY: AV

GROUND/WATER TREATMENT & TECHNOLOGY, INC.
P.O. BOX 1174
DENVILLE, NJ 07834

DWG SIZE: A SIZE
FILE: 16–1000/PL
DRAWING NUMBER: PD

D.4 Equipment Specifications

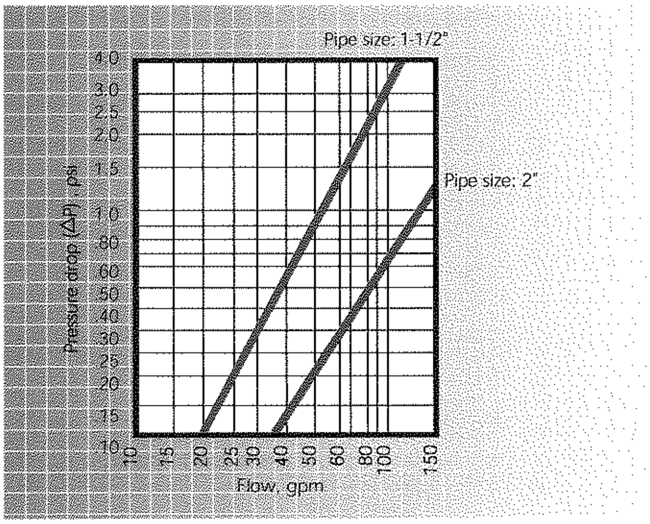
Model NCO Bag or Cartridge Filter Housings

Low cost filter housings for flow rates to 100 gpm*

NCO high-capacity filters offer an exceptional value in basic filtration applications. Offered in a size 2 and size 12 bag housing, the NCO is also available with our Platinum 700 cartridge series.

NCO housings provide large dirt-holding capacity combined with a rugged design rated to 150 psi. The housings incorporate a newly designed hinged, eyenut cover that is easily removed, reducing time spent on bag or cartridge change-out. The NCO bag housing offers versatility for any piping arrangement, utilizing our unistyle design (side and bottom outlet). Two connection sizes are available for both bag and cartridge filters.

The NCO housings are electropolished creating a smooth, easy-to-clean surface. Customize them with several options including, gauges and switches. A variety of filter bags or cartridges (rated 0.5μ absolute to 100μ nominal) can be utilized in this housing. Keep your filtration process cost effective without sacrificing quality.



* Based on housing only. Fluid viscosity, filter bag used, and expected dirt loading should be considered when sizing a filter.

Features

- Permanently piped housings are opened without special tools
- Carbon or stainless steel housings
- Covers are O-ring sealed
- O-ring seals: Buna N, EPR and Viton®
- 150 psi rated housing
- Heavy-duty basket, over 50% open area
- Uses standard number 1, 2 or 12 size bags and 500 or 700 series cartridges
- Filter selection surface area is:
  2.3 square feet (number 1 size bag),
  4.4 square feet (number 2 size bag),
  5.6 square feet (number 12 size bag)
  85 square feet (500 series cartridge)
  125 square feet (700 series cartridge)
- 1-1/2-inch or 2-inch NPT inlet and outlet
- 1/4-inch NPT vent connection
- Adjustable leg assembly

How To Order

Build an ordering code as shown in the example.

QUALITY SYSTEM REGISTERED TO ISO 9001: 1994

Housing Options
Example : **NCO8-30 - 2P - * - 150 - C - B - PB**

MODEL
NCO8 (#1, #2 bag & 500 cartridge)
NLCO8 (#12 bag)
NCO8135 (700 cartridge)
NCO8135 convertible

BASKET SIZE
15-inch (NCO only) = **15**
30-inch (NCO or NLCO) = **30**
NCO8135 = ***No Symbol***

PIPE SIZE
1-1/2-inch female NPT = **1-1/2P**
2-inch female NPT = **2P**

OUTLET STYLE
Side/Bottom Unistyle (NCO or NLCO) = *
Bottom = **1**

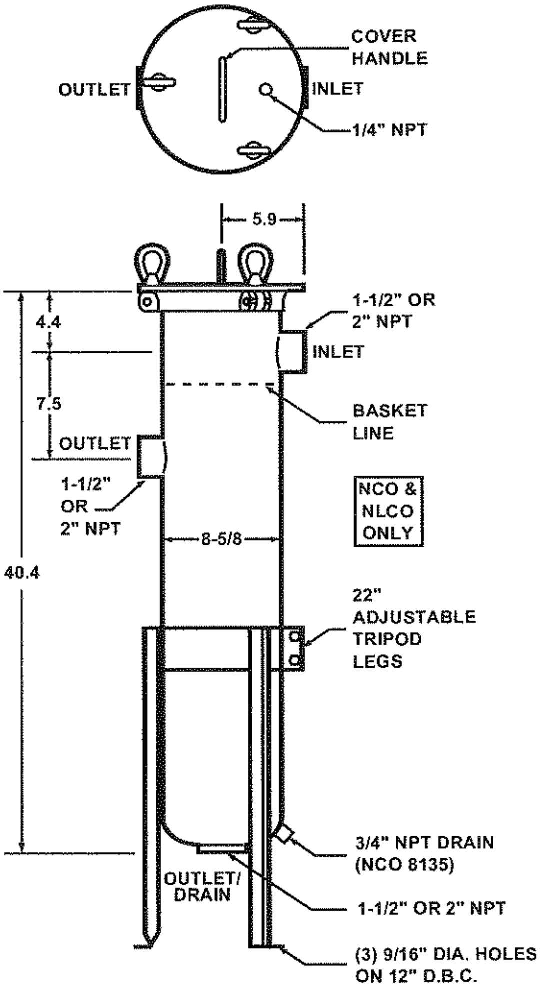
PRESSURE RATING
150 psi = **150**

HOUSING MATERIAL
Carbon steel = **C**
304 Stainless steel = **S**

COVER SEAL
Buna N = **B**
Ethylene propylene = **E**
Viton® Fluoroelastomer = **V**

BASKET TYPE
Filter bag basket (NCO or NLCO) = **PB**
700 Cartridge (NCO8135) = **700**
Convertible (NCO8135) = **700PB**

1. Filter bags are specified separately. See Rosedale Master Catalog 3rd edition.
2. Basket material is compatible with housing.
3. Weight (approximately): 70 lbs.



Rosedale Products, Inc.
3730 W. Liberty Rd, Ann Arbor, MI 48103
Tel: 800-821-5373 or 734-665-8201
Fax: 734-665-2214
http://www.rosedaleproducts.com/
E-mail: filters@rosedaleproducts.com

Call us today for our complete catalog or visit our web site to see our entire product line.

Sheet NCO-100 5M605 Printed in USA

Westates® coconut shell based granular activated carbon - AquaCarb® 830C, 1230C and 1230AWC (12 x 30 products formerly CC-602 and CC-602AW)

For use in Potable Water, Wastewater and Process Water applications

Description

AquaCarb® 830C, 1230C and 1230AWC carbons are high activity coconut shell based granular activated carbons. These hard, attrition resistant high surface area carbons are designed to remove difficult to adsorb organics from potable, waste and process water. They are especially effective for adsorbing chlorine, disinfection by-products, TCE, PCE, MTBE and other trace level organics. AquaCarb® 1230AWC carbon is acid washed yielding a very low ash content, pH neutral carbon that is ideally suited for use in potable water and high purity water systems for the microelectronics and other industries.

Applications

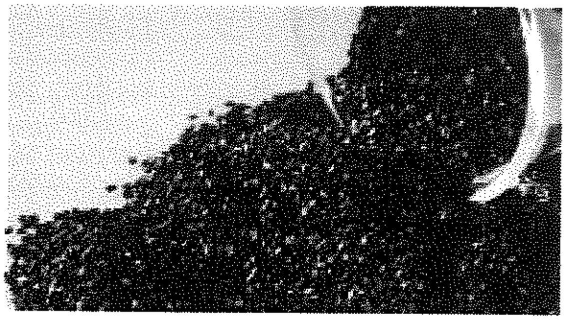
Cost effective AquaCarb® activated carbons developed by Siemens have been demonstrated to provide superior performance in an extensive array of liquid phase treatment applications. AquaCarb® activated carbons are available for:

- Removal of trace organic contaminants
- Pesticide removal
- MTBE removal
- Disinfection by-product (DBP) removal
- Drinking water treatment
- Industrial process water treatment
- High purity water applications
- Home water filtration systems

Quality Control

AquaCarb® activated carbons are extensively quality checked at our State of California certified environmental and carbon testing laboratory located in Los Angeles, CA. Siemens' laboratory is fully equipped to provide complete quality control analyses using ASTM standard test methods in order to assure the consistent quality of all Westates® carbons.

Our technical staff offers hands-on guidance in selecting the most appropriate system, operating conditions and carbon to meet your needs. For more information, contact your nearest Siemens representative.

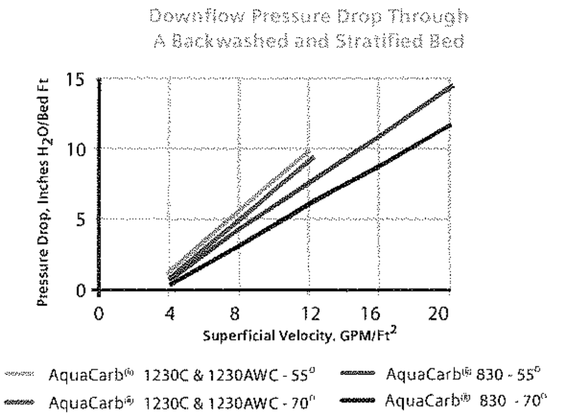


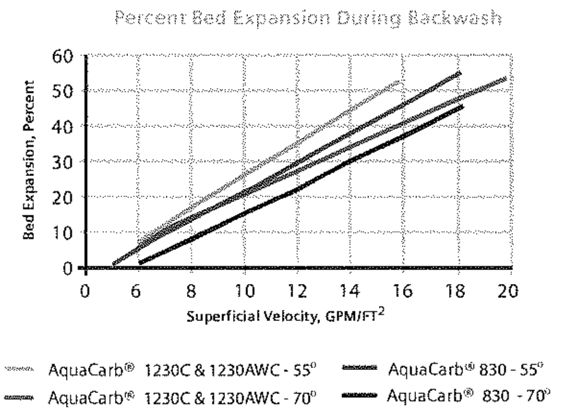
Features and Benefits:

- ANSI/NSF Standard 61 classified for use in potable water applications
- Fully conforms to physical, performance and leachability requirements established by the current ANSI/AWWA B604 (which includes the Food Chemical Codex requirements)
- A detailed quality assurance program guarantees consistent quality from lot to lot and shipment to shipment

Typical Properties

Parameter	AquaCarb® 1230C	AquaCarb® 1230AWC	AquaCarb® 830C
Carbon Type	Coconut Shell	Coconut Shell	Coconut Shell
Mesh Size, U.S. Sieve	12 x 30	12 x 30	8 x 30
Effective Size, mm	0.6 - 0.85	0.6 - 0.85	0.8 - 1.1
Uniformity Coefficient	2.0	2.0	2.1
Iodine No., mg I_2/g	1100	1100	900
Hardness No., Wt. %	95	95	95
Abrasion No., Wt. %	85	85	85
Apparent Density, g/cc	0.46 - 0.52	0.45 - 0.52	0.46 - 0.52
Water Soluble Ash, Wt. %	2	0.2	2
Contact pH	9 - 10	6.5 - 8	9 - 10





Safety Note: Under certain conditions, some compounds may oxidize, decompose or polymerize in the presence of activated carbon causing a carbon bed temperature rise that is sufficient to cause ignition. Particular care must be exercised when compounds that have a peroxide-forming tendency are being adsorbed. In addition the adsorption of VOCs will lead to the generation of heat within a carbon bed. These heats of reaction and adsorption need to be properly dissipated in order to fully assure the safe operation of the bed.

Wet activated carbon readily adsorbs atmospheric oxygen. Dangerously low oxygen levels may exist in closed vessels or poorly ventilated storage areas. Workers should follow all applicable state and federal safety guidelines for entering oxygen depleted areas.

All information presented herein is believed reliable and in accordance with accepted engineering practices. Siemens makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. Siemens assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

Siemens
Water Technologies
2430 Rose Place
Roseville, MN 55113
800.525.0658 phone

WS-AQ12dr-DS-0308
Subject to change without prior notice.

Recordall® Cold Water Top Load Bronze Disc Meter

Size 2" (DN 50mm)

Technical Brief

DESCRIPTION

Badger Meter offers the Recordall Disc meter in Cast Bronze and a Low Lead Alloy. The Low Lead Alloy (Trade Designation: M170 LL) version complies with NSF/ANSI Standard 61 and carries the NSF-61 Mark on the housing. All components of the Low Lead Alloy meter, i.e., disc, chamber, housing, seals, etc., comprise the certified system.

APPLICATIONS: For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

OPERATION: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to nutate. The disc, which moves freely, nutates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently-sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc nutations into volume totalization units displayed on the register dial face.

OPERATING PERFORMANCE: The Badger Recordall Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates (100 ± 1.5%), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

CONSTRUCTION: Badger Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: bronze meter housing, measuring chamber, and permanently, sealed register. A corrosion-resistant thermoplastic material is used for the measuring chamber.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment. The built-in strainer has an effective straining area of twice the inlet size.

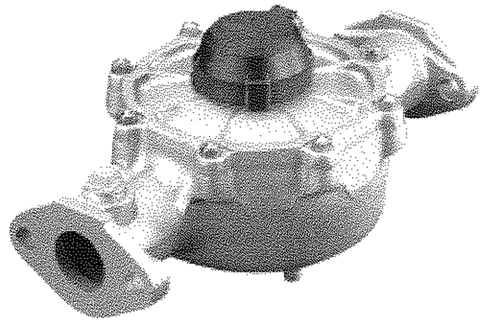
MAGNETIC DRIVE: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading, remote or automatic meter reading options.

SEALED REGISTER: The standard register consists of a straight-reading, odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating thermoplastic gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Generator-type remote reading and automatic meter reading systems are available for all Recordall Disc meters. All reading options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES: Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw/or Torx® tamper seal resistant screw is added to the meter. Both can be installed at the meter site or at the factory.

MAINTENANCE: Badger Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger offers various maintenance and meter component exchange programs to fit the needs of the utility.

CONNECTIONS: Tailpieces/Flanges for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.



Model 170 shown with optional 1" Test Plug

SPECIFICATIONS

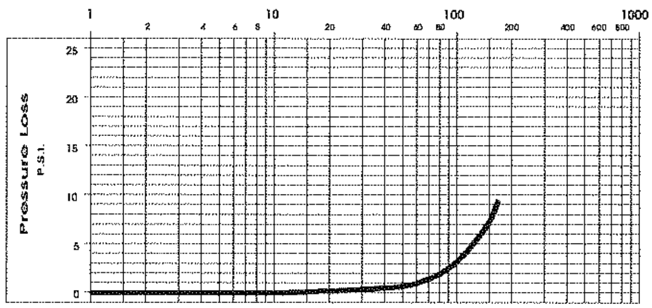
Typical Operating Range (100% ± 1.5%)	2 1/2 -170 GPM (.57 to 39 m³/hr)
Low Flow (Min. 95%)	1 1/2 GPM (.34 m³/hr)
Maximum Continuous Operation	100 GPM (23 m³/hr)
Pressure Loss at Maximum Continuous Operation	3.3 PSI at 100 GPM (.23 bar at 23 m³/hr)
Maximum Operating Temperature	80°F (26°C)
Maximum Operating Pressure	150 PSI (10 bar)
Measuring Element	Nutating disc, positive displacement
Register Type	Straight reading, permanently sealed magnetic drive standard. Remote reading or Automatic Meter Reading units optional.
Registration	100 Gallons, 10 Cubic Feet, 1 m³
Register Capacity	100,000,000 Gallons, 10,000,000 Cubic Feet, 1,000,000 m³. 6 odometer wheels.
Meter Connections	2" AWWA two bolt elliptical flange, drilled, or 2" - 11 1/2 NPT internal pipe threads.
Optional Test Plug	1" NPT test plug (TP) available on elliptical long and short versions.

MATERIALS

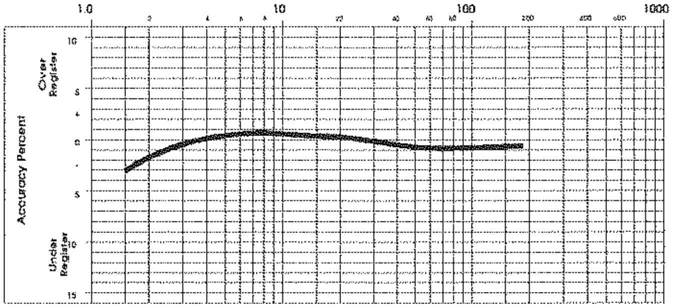
Meter Housing	Cast Bronze, Low Lead Alloy
Housing Top Plates	Bronze, Low Lead Alloy
Measuring Chamber	Thermoplastic
Disc	Thermoplastic
Trim	Stainless Steel/Bronze
Strainer	Thermoplastic
Disc Spindle	Stainless Steel
Magnet	Ceramic
Magnet Spindle	Stainless Steel
Register Lid and Box	Thermoplastic or Bronze
Generator Housing	Thermoplastic

BadgerMeter, Inc.

PRESSURE LOSS CHART



ACCURACY CHART

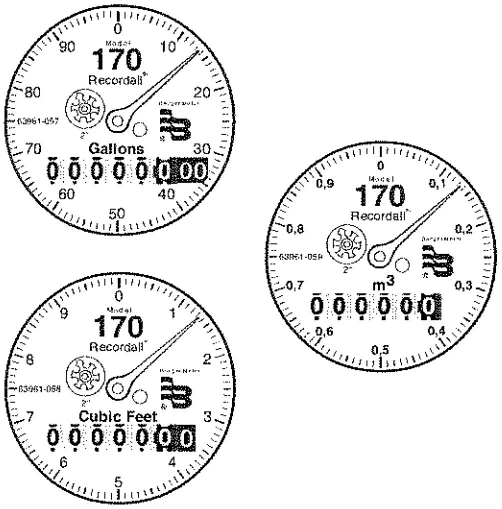


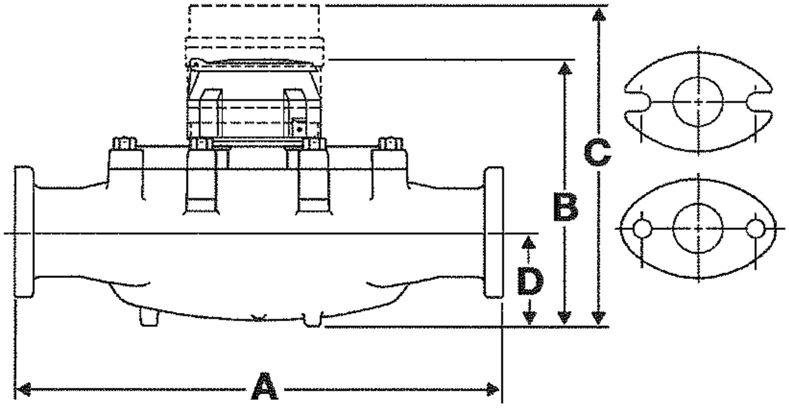
METER SIZE	METER MODEL	A LAYING LENGTH	B HEIGHT REG./RTR	C HEIGHT GEN.	D CENTERLINE BASE	WIDTH	APPROX. SHIPPING WEIGHT
2" (50mm)	170 EL, Hex. 170 EL, TP	15¼" (387mm)	8" (203mm)	9⅜" (238mm)	2⅞" (73mm)	9½" (241mm)	30 lb. (13.6kg)
2" (50mm)	170 ELL, 170 ELL, TP	17" (432mm)	8" (203mm)	9⅜" (238mm)	2⅞" (73mm)	9½" (241mm)	30 lb. (13.6kg)

EL = Elliptical ELL = Elliptical Long Hex = Hexagon, 2" - 11½ NPT Thread TP=Test Plug 1"

Sweep Hand Registration

MODEL	GALLON	CU.FT.	CU. METER
M170	100	10	1





RTR® and Recordall® are registered trademarks of Badger Meter, Inc.
TORX® is a registered trademark of Camcar, Division of Textron, Inc.

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.

Please see our website at
www.badgermeter.com
for specific contacts.

BadgerMeter, Inc.
P.O. Box 245036, Milwaukee, WI 53224-9536
(800) 876-3837 / Fax: (888) 371-5982
www.badgermeter.com

STRICK *'America's Premier Trailer Manufacturer'*

STRICK SALES ORDER SPECIFICATIONS
100" INSIDE WIDTH - PLYWOOD

	BASE	X	STANDARD	OPTIONAL CUSTOMER REQUIREMENTS
1	5TH WHL HGT	X	47 ½"	
	OVERALL HGT	X	13FT-6"	
	UPPER COUPLER	X	3 1/8"	
	HGT @ EVE FRT	X	110"	
	TIRE SIZE	X	295/75R22.5	
2	WIDTH	X	2.6 METER	
3	KING PIN LOC	X	36"	
4	FRONT PANEL	X	.048" ALUM	
5	FRONT POSTS	X	(5) 1.3" DEEP	
6	FRONT CORNER	X	4" RAD/EXT ALUM	
7	FRT TOP RAIL	X	3 – PC ALUM	
8	AIR & ELECT	X	ROADSIDE FLUSH	
9	SIDE PANEL	X	.048" ALUM	
10	PANEL COLOR	X	POLAR WHITE	
11	SIDE POSTS	X	.75" DEEP, A-SLOT	
12	POST CTRS	X	24"	
13	EXTRA POSTS	X	(1) EA KP & LG	
14	INSIDE WIDTH	X	100" AT POST	
15	ROOF 1-PC	X	.040" ALUM	
16	ROOF BOWS	X	STEEL TEN.	
17	OVERHDOOR	X	WHITING	**Please option swing doors**
18	SWING DOOR		¾" PLYMETAL	
19	SW DOOR FACE		WHITE ALUM	
20	SW DOOR BACK		GALV. STEEL	
21	LOCK RODS		(1) PER DOOR	
22	ALUM. HINGES		(5) PER DOOR	
23	LANDING GEAR	X	JOST CUSHION FT	
24	LG BRACING	X	"K" STYLE	
25	LG LOCATION		141 7/16"	**110 inches**
26	FLOOR THICK.	X	1 3/8" NOMINAL	
27	FLOOR MATL.	X	LAM. HDWD	
28	FLR HAT SECT.	X	HAT EA SIDE FLR	
29	FLOOR SCREWS	X	3/PER EA CTR (6)	
30	CRASHPLATE	X	15" SMOOTH STL	
31	CHASSIS	X	STRAIGHT	
32	BAY C/M	X	4" STEEL	
33	RG C/M	X	4" STEEL	
34	CM SPACING	X	12" CENTERS	
35	SLIDER			**Fixed Axle**

CUSTOMER: **Boston Trailer Sales / Ground/Water**	ORDER NBR:	PAGE: 2 of 2

100" INSIDE WIDTH

	BASE	X	STANDARD	OPTIONAL CUSTOMER REQUIREMENTS
36	SUSPENSION		REYCO AIRRIDE DOCKMASTER-2	**Spring-ride Hutch 9700**

Revised: 1-16-08

			W/AXLES	
37				
38	AXLES	X	½" WALL	Single – axle setup
39				
40	BRAKES	X	16 ½ X 7 "Q" TYPE	
41	BRAKE LINING	X	W/AXLE	
42	SLACK ADJUST.	X	ARVINMERITOR AUTO	
43	BRAKE CHMBR	X	RANGER	
44	DISC WHEELS	X	PCW/22.5 X 8.25	
45	BEARINGS	X	HM SERIES	
46	HUBS & DRUMS	X	PLTD/O.B. CAST DR	
47	GLADHANDS	X	FIXED R/S FLUSH	
48	TIRE VALVE	X	TR-572	
49	WHEEL SEALS	X	CR SEALS & CAPS	
50	AIR BRAKES	X	HALDEX 2S/1M WO/D	
51	MUD FLAPS	X	ON SLIDER	
52	ELEC HARNESS	X	SEALED SYSTEM	
53	ELEC RECEPT	X	7-WAY SPLIT PIN	
54	MRKR LIGHTS	X	TL #19	
55	S/T/T LIGHTS	X	TL #40	
56	SIDE TRN LIGHT	X	TL #60	
57	LICENSE LIGHT	X	TL #19	
58	HEADER LIGHT	X	TL#19	
59	SIDE LINING	X	¼" VERTICAL PW	
60	SIDE SCUFF	X	10" CORR STEEL	
61	FRONT LINING	X	½" STRUCTURE WD	
62	FRONT SCUFF	X	7GA x 12" FLAT STL	
63	CARDHOLDER	X	TL #97960 – FRT MT	
64	CONSP. TAPE	X	6"x 6" RED/WHITE	
65	I.C.C. BUMPER 20" OFF GRD	X	BOLT-ON PERF TUBE & VERTICALS	**NEW SAFETY BUMPER**
66	DOCK BMPRS	X	RUBBER BETWEEN S/T/T LIGHTS	
67	SIDE DOOR	X	CURBSIDE	SWING SINGLE ENTRY DOOR ~ 41" OPENING
68				

	TEMPORARY LIFT PADS
	LICENSE PLATE SUPPLIED BY CUSTOMER
	SIGNS / DECALS SUPPLIED BY CUSTOMER
	SIGNS / DECALS SUPPLIED BY STRICK
	UNIT NUMBERS SUPPLIED BY CUSTOMER
	UNIT NUMBERS SUPPLIED BY STRICK
	PARTS MANUAL REQUIRED

UNIT NUMBER LOCATION:
SIZE:
HORIZONTAL OR VERTICAL:

NOTE: ALL LINES MUST BE CHECKED OFF

CUSTOMER APPROVAL: ______________________________

DEALER APPROVAL: ______________________________

DATE: ______________________________

DATA SHEET

USFILTER WESTATES CARBON AQUACARB® 830 AND 1240

Coal based granular activated carbon

(Formerly KG-401 and KG-502)

FOR MUNICIPAL, INDUSTRIAL AND REMEDIAL WATER TREATMENT

Description & Applications

AquaCarb® 830 and AquaCarb® 1240 are high activity granular activated carbons manufactured from selected grades of bituminous coal. Manufactured by direct activation, they exhibit exceptional hardness and attrition resistance and have become a cost effective choice for use in municipal, industrial and remedial water treatment applications. These high surface area microporous carbons have been specifically developed for the removal of a broad range of organic contaminants from potable, waste and process waters.

- ANSI/NSF Standard 61 classified for use in potable water applications
- Fully conforms to physical, performance and leachability requirements established by the current ANSI/AWWA B604 (which includes the Food Chemical Codex requirements)
- A detailed quality assurance program guarantees consistent quality from lot to lot and shipment to shipment

Quality Control

All AquaCarb® activated carbons are extensively quality checked at our State of California certified environmental and carbon testing laboratory located in Los Angeles, CA. USFilter's laboratory is fully equipped to provide complete quality control analyses using ASTM standard test methods in order to assure the consistent quality of all AquaCarb® carbons.

Our technical staff offers hands-on guidance in selecting the most appropriate system, operating conditions and carbon to meet your needs. For more information, contact your nearest USFilter representative.

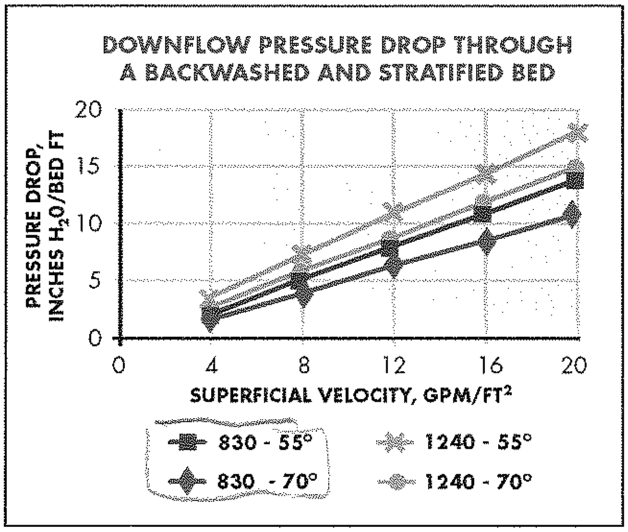
USFilter

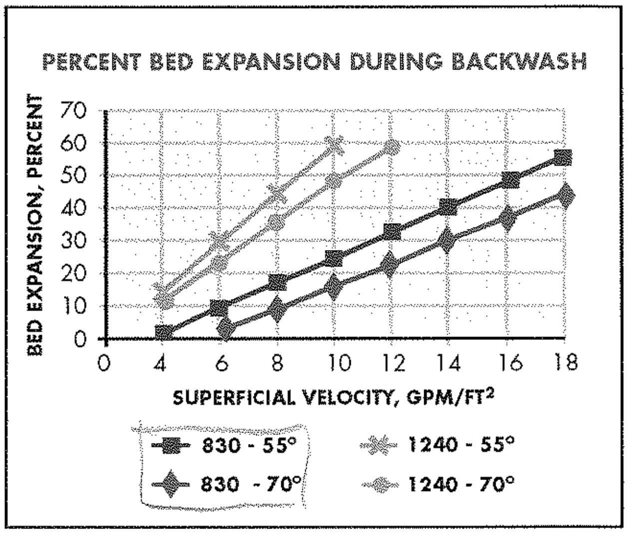
AQUACARB® 830

AQUACARB® 1240

Coal based granular activated carbon

(Formerly KG-401 and KG-502)





Safety Note: Wet activated carbon depletes oxygen from the air and therefore dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessel's oxygen content should be determined and work procedures for potentially low oxygen areas should be followed. Read Material Safety Data Sheet (MSDS) before using this product.

All information presented herein is believed reliable and in accordance with accepted engineering practices. USFilter makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. USFilter assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

SPECIFICATIONS/TYPICAL PROPERTIES

Specification	AquaCarb® 830	AquaCarb® 1240
Carbon Type	Bituminous Coal	Bituminous Coal
Mesh Size, U.S. Sieve	8 x 30	12 x 40
Effective Size, mm	0.8 - 1.1	0.55 - 0.75
Uniformity Coefficient (max)	2.1	1.9
Iodine No., mgl$_2$/g (min.)	900	1000
Abrasion No., Wt. % (min.)	80	80
Apparent Density, g/cc	0.46 - 0.54	0.46 - 0.54

USFilter reserves the right to change the specifications referred to in this literature at any time, without prior notice. AquaCarb is a trademark of United States Filter Corporation or its affiliates.

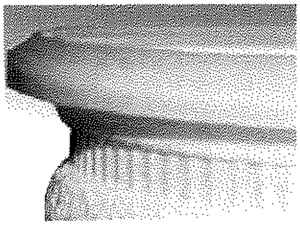
Westates
Customer and
Technical Service Network:

Gulf Coast Region	800.659.1723
(Louisiana)	225.744.3153
Western Region	800.659.1771
Mid-Atlantic Region	800.659.1717
Midwest Region	708.345.7290
Northwest Region	800.659.1718
Southeast Region	225.744.3153
New England Region	800.659.1717

www.usfilter.com

HAYWARD FILTRATION

manufacturer of GAF Filter LOEFFLER FILTRATION

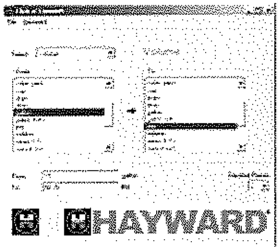


The SENTINEL® collar features a super strong welded seam that stands up to the most aggressive applications.

Detailed Specifications and Information

Email to Associates

Click here for the Printer friendly page



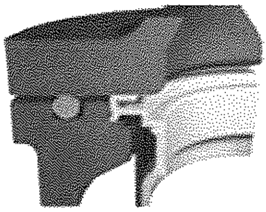
SENTINEL® Welded Construction Filter Bags

Welded Construction Filter Bags

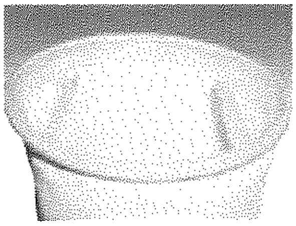
Now, applications requiring polypropylene or polyester felt filter bags can take advantage of the all-welded construction afforded by Hayward patented SENTINEL® Filter Bags. These bags, made from silicone free materials feature super-strong welded construction rather than sewn seams. This construction ensures that nothing by-passes the filtration media through holes in sewn fabric.

SENTINEL® Seal Ring

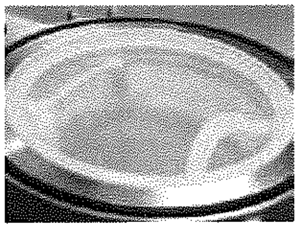
All SENTINEL® Filter Bags utilize the patented SENTINEL® seal. It's all plastic, polypropylene, polyester or Santoprene® construction, provides a flexible, chemically resistant seal which adapts to any filter housing. This unique design employs a pressure activated sealing lip which responds to increases in differential pressure. As the pressure increases, the seal of the ring improves, insuring by-pass free performance over all ranges of pressure, temperature and micron rating. The elevated bag handles make removal of the bag from the vessel quick and easy. When a SENTINEL® Filter Bag is installed into an Eaton Filtration Housing, the ring snaps into place, holding its position until the housing is closed.



Cut away shows how the SENTINEL® ring seals inside the filter housing.

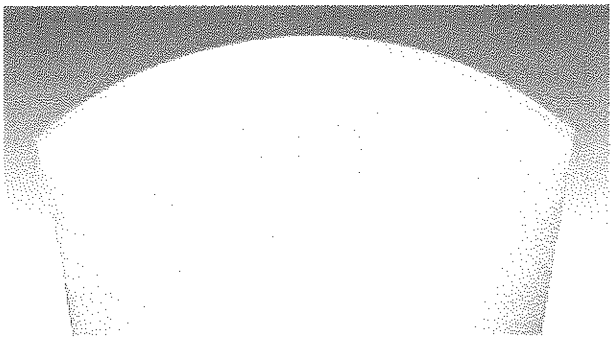


Handles on SENTINEL® ring bag remain above fluid level for easy removal.



Filter bag with SENTINEL® ring fits perfectly inside filter housing.

Proprietary Construction Process



A proprietary construction processes produce a reliable, durable filter bag. Ass seams are fully welded, producing strong, reliable joints with no by-pass or loose sewing thread. Seams are both strong and flexible, allowing the filter bag to conform to the restrainer basket. The seam edges are heat sealed, eliminating possible loose fibers. This results in a filter bag with durable performance for the most demanding applications.

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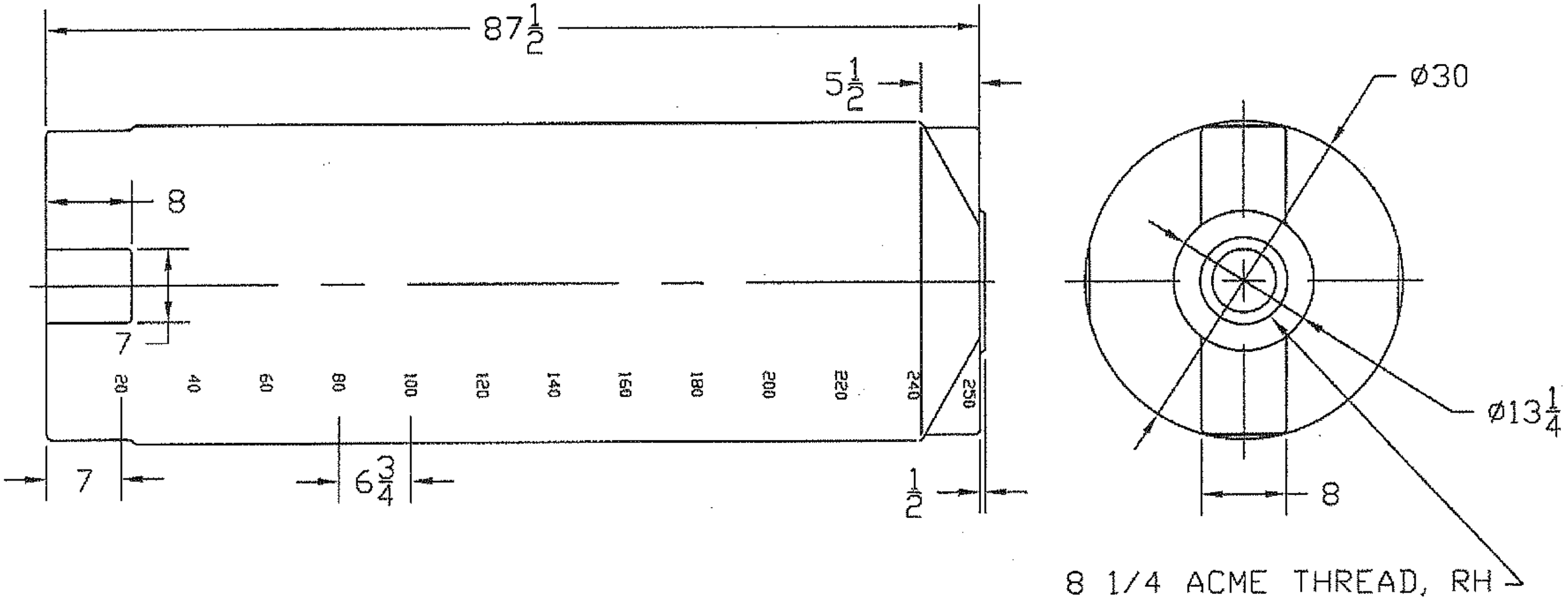
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED



NORWESCO
ST. BONIFACIUS, MN

250 GALLON VERTICAL
TANK X 30 DIA

JTP 07AUG03

SIZE A
FSCM NO.
DWG NO.
REV
SCALE 1/16
SHEET

AMT

A Subsidiary of The Gorman-Rupp Company ™

High Head Straight Centrifugal Pumps

- ***300 Series Investment Cast Stainless Steel, Cast Bronze** and **Cast Iron** with **Stainless Steel** Impeller Construction*
- *Viton® Mechanical Seal and O-Ring with Stainless Steel and Bronze Models*
- *Buna-N Mechanical Seal and O-Ring with Cast Iron Models*
- *Optional Silicon Carbide Mechanical Seals Available*
- *Discharge Port Rotates in 90° Increments*
- *489 Series: 1-1/4" x 1" Ports*
- *490 Series: 1-1/2" x 1 1/4" Ports*
- *Max. Working Pressure 150 PSI*
- *Max. Temperature 200° F*
- *Max. Flow 118 GPM*
- *Max. Head 149 Ft. (65 PSI)*
- *High Efficiency Closed Impeller*
- *Available with Open Drip Proof (ODP) or Totally Enclosed Fan Cooled (TEFC) 56J Motors*
- *1/2 HP to 3 HP Single and Three Phase 3450 RPM Motors*

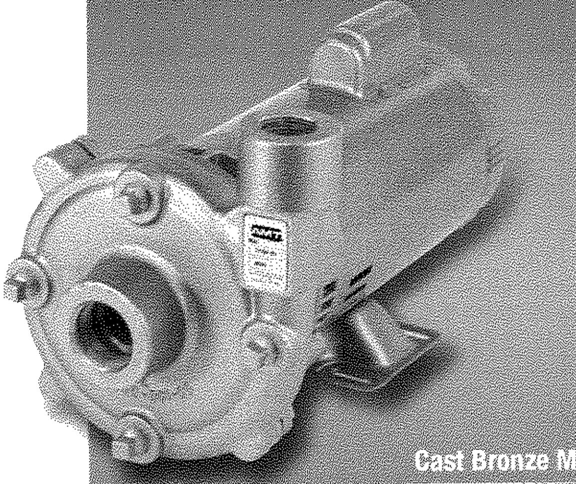
AMT High Head Straight Centrifugal pumps are designed for continuous-duty OEM, Industrial/Commercial and processing applications including circulation, chemical processing, liquid transfer, heating and cooling, sprinkler/fire protection systems and pressure boosting. These heavy duty high pressure pumps are available in a variety of construction and seal materials to meet your specification. The line also features a wide selection of single & three phase ODP or TEFC motors, up to 3 horsepower. All models feature Type 21 mechanical seals and O-rings. Pull-from-the-rear design for easy servicing without disturbing any piping. High efficiency impellers maximize performance.

AMT Centrifugal pumps are reliable, cost effective and low maintenance. Many are readily available **"Off-the-Shelf"** for fast 24 hour shipment. For use with non-flammable liquids compatible with pump component materials.

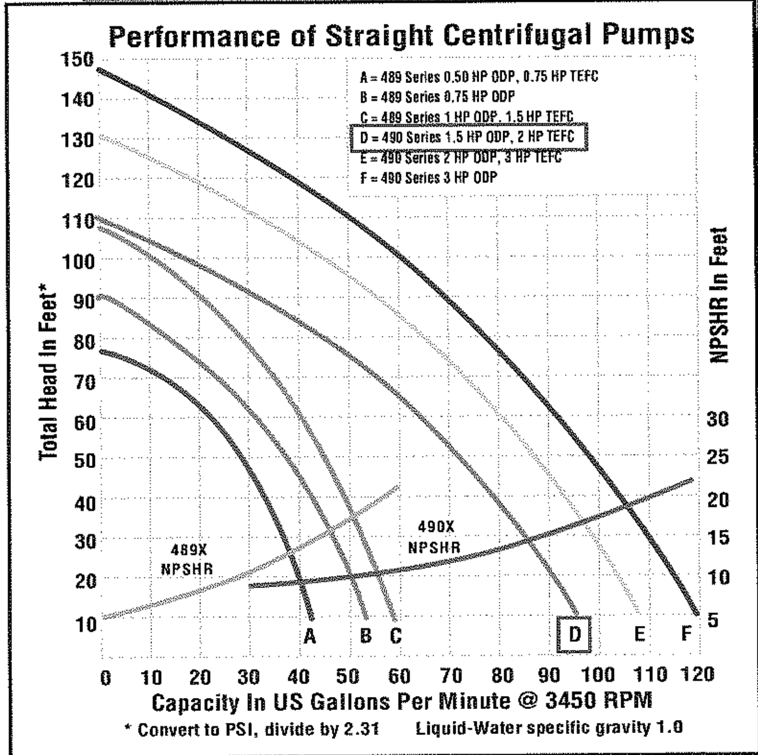
Viton® is a registered trademark of E.I. DuPont

INDUSTRIAL DUTY

Stainless Steel Model 490A-98



Cast Bronze Model 4890-97



Performance of Straight Centrifugal Pumps

* Convert to PSI, divide by 2.31 Liquid-Water specific gravity 1.0

High Head Straight Centrifugal Pumps

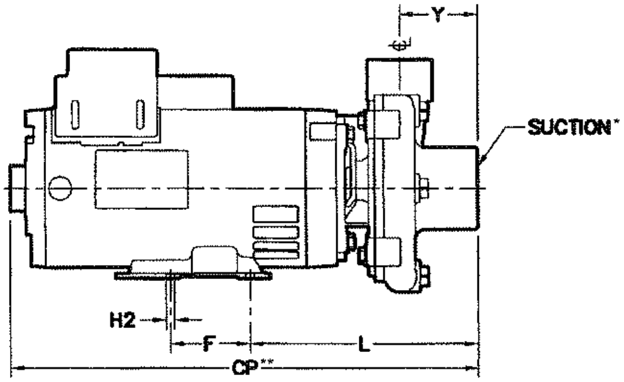
Pump Dimensional & Specification Data

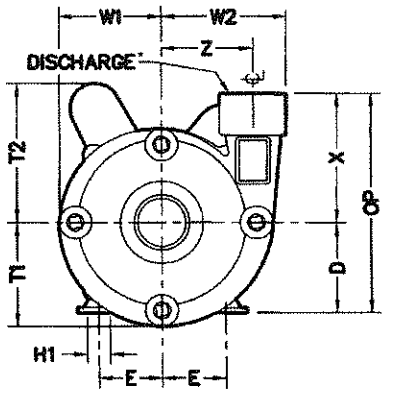
‡ Model	Curve	HP	PH	ENC	VOLTAGE @ 60 Hz+	FULL LOAD AMPS	SUC*	DIS*	CP**	D	E	F	H1	H2	L	OP	T1	T2	W1	W2	X	Y	Z	‡ XCI (-95)	‡ XB (-97)	‡ XSS(-98)
4893	A	1/2	1	ODP	115/230	10/5	1-1/4"	1"	14.8	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	43 lbs.	44 lbs.	43 lbs.
4894	A	1/2	3	ODP	208-230/460	4/2	1-1/4"	1"	13.6	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	43 lbs.	41 lbs.	43 lbs.
489C	A	3/4	1	TEFC	115/230	9/5	1-1/4"	1"	16.3	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	46 lbs.	49 lbs.	46 lbs.
489D	A	3/4	3	TEFC	230/460	3/2	1-1/4"	1"	14.2	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	44 lbs.	47 lbs.	44 lbs.
4895	B	3/4	1	ODP	115/230	13/7	1-1/4"	1"	15.7	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	44 lbs.	45 lbs.	44 lbs.
4896	B	3/4	3	ODP	208-230/460	4/2	1-1/4"	1"	14.0	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	44 lbs.	42 lbs.	44 lbs.
4890	C	1	1	ODP	115/230	17/9	1-1/4"	1"	14.2	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	47 lbs.	48 lbs.	47 lbs.
4891	C	1	3	ODP	208-230/460	5/3	1-1/4"	1"	13.4	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	45 lbs.	46 lbs.	45 lbs.
489A	C	1-1/2	1	TEFC	115/230	18/9	1-1/4"	1"	16.1	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	55 lbs.	58 lbs.	55 lbs.
489B	C	1-1/2	3	TEFC	230/460	5/3	1-1/4"	1"	15.2	3.5	2.44	3.00	0.88	0.3	7.3	8.2	3.7	4.7	3.5	4.4	4.7	2.1	3.35	53 lbs.	56 lbs.	53 lbs.
4902	D	1-1/2	1	ODP	115/230	22/11	1-1/2"	1-1/4"	15.5	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	57 lbs.	64 lbs.	57 lbs.
4903	D	1-1/2	3	ODP	208-230/460	7/4	1-1/2"	1-1/4"	15.7	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	54 lbs.	58 lbs.	54 lbs.
490C	D	2	1	TEFC	115/230	22/11	1-1/2"	1-1/4"	18.0	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	65 lbs.	72 lbs.	62 lbs.
490D	D	2	3	TEFC	230/460	6/3	1-1/2"	1-1/4"	17.5	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	60 lbs.	67 lbs.	63 lbs.
4904	E	2	1	ODP	115/230	28/14	1-1/2"	1-1/4"	16.8	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	63 lbs.	62 lbs.	63 lbs.
4905	E	2	3	ODP	208-230/460	7/4	1-1/2"	1-1/4"	16.5	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	58 lbs.	62 lbs.	58 lbs.
490A	E	3	1	TEFC	230	16	1-1/2"	1-1/4"	17.1	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	74 lbs.	76 lbs.	71 lbs.
490B	E	3	3	TEFC	230/460	8/4	1-1/2"	1-1/4"	16.0	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	66 lbs.	73 lbs.	69 lbs.
4900	F	3	1	ODP	230	18	1-1/2"	1-1/4"	15.0	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	69 lbs.	73 lbs.	69 lbs.
4901	F	3	3	ODP	208-230/460	9/5	1-1/2"	1-1/4"	15.2	3.5	2.44	3.00	0.88	0.3	8.8	8.4	4.0	4.9	3.9	4.7	4.9	3.0	3.49	64 lbs.	68 lbs.	69 lbs.

(*) Standard NPT (female) pipe thread.
(**) This dimension may vary due to motor manufacturer's specifications.
(+) 3-Phase motors can also operate on 50 Hz. (This will change Full Load Amps, Service Factor and RPM)
NOTE: Dimensions have a tolerance of ±1/8".
NOTE: Electric supply for ALL motors must be within ±10% of nameplate voltage rating(Ex. 230V ±10%= 207 to 253)

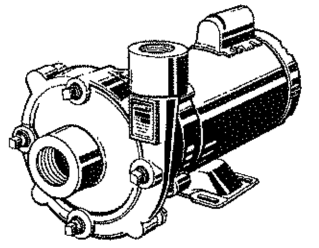
‡ *When Ordering Add the Correct-9x Suffix to Model Number Indicating Material Selection (ex: 4893-95)*

XCI (-95)=Cast Iron Construction with SS Impeller and Buna-N Seals, Max. Temperature 180°F
XB (-97)=Cast Bronze Construction with Viton® Seals, Max. Temperature 200°F
XSS (-98)=Stainless Steel Construction with Viton® Seals, Max. Temperature 200°F





Standard Features

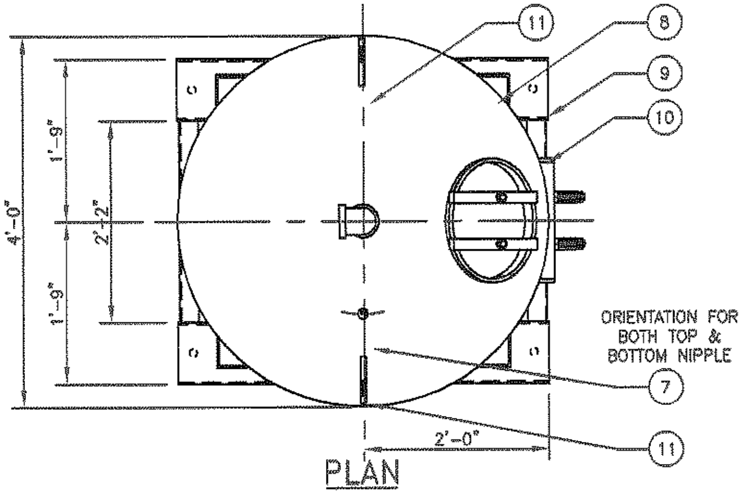


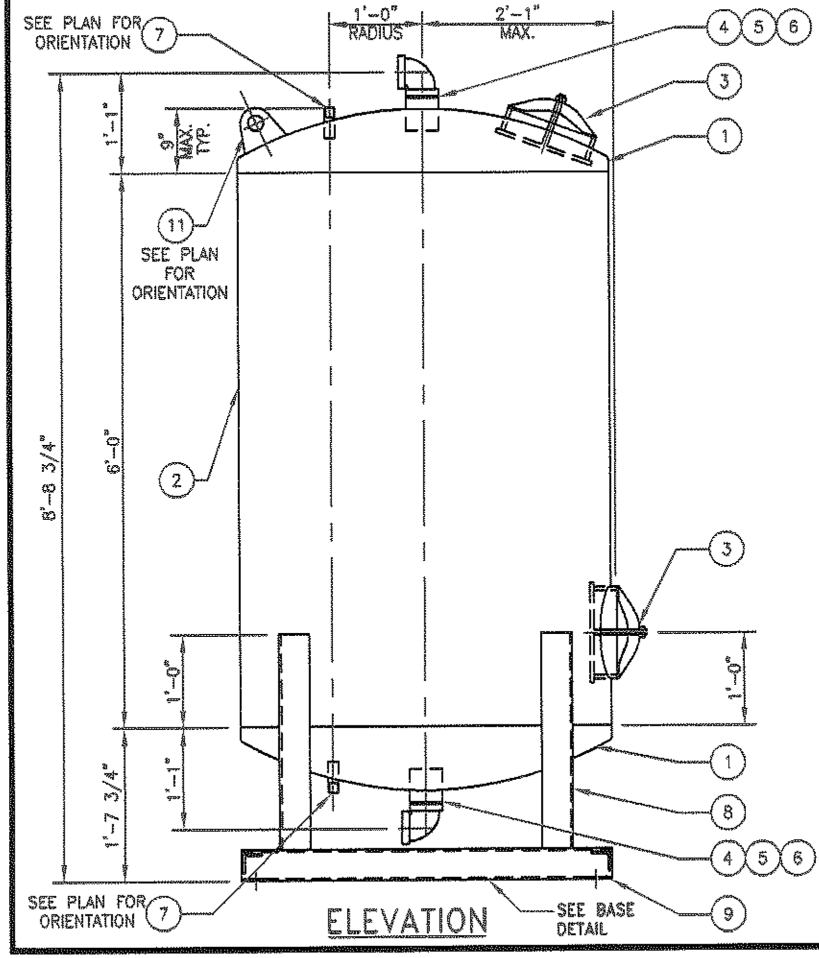
- 300 Series Investment Cast Stainless Steel, Bronze & Cast Iron Construction
- Buna-N or Viton® Mechanical Seal and O-Rings Depending on Model
- Stainless Steel Hardware
- NEMA 56J ODP & TEFC Single and Three Phase 3450 RPM Motors
- Stainless Steel Motor Shaft
- NEMA Base Mounted Motors
- High Efficiency Closed Impeller
- Discharge Rotates in 90° Increments
- Maximum Working Pressure to 150 PSI
- Max. Temperature 200° F (Viton®), 180° F (Buna-N)
- Four Front Drain Plugs, Located 90° Apart
- **"Off-the-Shelf"** Availability for Many Models

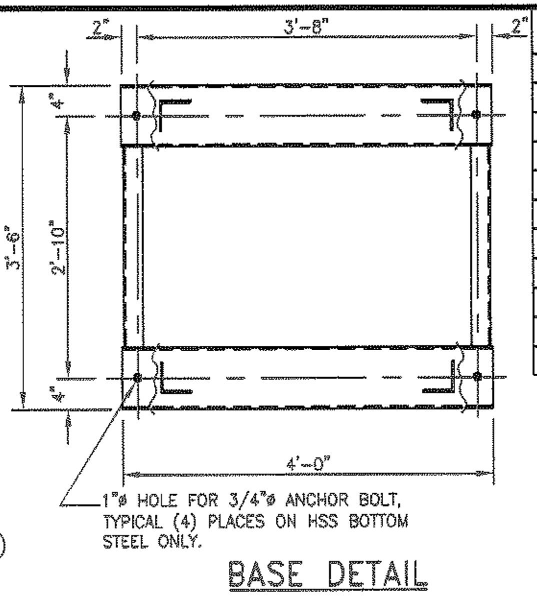
ots OFF THE SHELF
PUMPS

Viton® is a registered trademark of E.I. DuPont

See price book pages 32 & 33







#	QTY.	DESCRIPTION
1	2	C.S. STD. Flanged&Dished Non-Code tank head 3/16" THK.
2	1	C.S. 3/16" THK. x 48" OD x 72" Long
3	2	C.S. Elliptical Non-Code Manway Assembly 12"x16" w/ 2 yoke
4	2	3"ø, 150 LBS, C.S. Black Pipe Threaded Coupling
5	2	3"ø, SCH 40, C.S. Close Threaded Nipple
6	2	3"ø, 150 LBS, C.S. Black Pipe 90° Elbow
7	2	1"ø, SCH 40, C.S. 4" Long Threaded Nipple
8	4	Angle 4" x 4" x 1/4" Support Leg
9	2	HSS 8" x 4" x 1/4" Base
10	2	Angle 2 1/2" x 2 1/2" x 1/4" Cross Tie
11	2	Lifting Lug (Design by Fabricator, See Note 2)

GENERAL NOTES

1) MATERIAL SHALL BE CARBON STEEL GRADE A 36 UNLESS NOTED OTHERWISE.

2) FABRICATOR TO DESIGN LIFTING LUGS TO MEET 5500 LBS LIFTING REQUIREMENT.

3) TANK INTERIOR SHALL BE SANDBLASTED TO SSPC-SP-5 WHITE METAL FINISH, PAINTING BY OTHERS.

4) TANK EXTERIOR SANDBLASTING AND PAINTING BY OTHERS.

5) TANK SHALL BE LEVEL +/- ONE DEGREE.

6) FABRICATION TOLERANCE SHALL BE +/- (1/4) INCH.

7) UNLESS NOTED OTHERWISE, ALL WELDS SHALL BE SEAL WELD, ALL JOINTS SHALL BE WELDED BOTH SIDE WHERE APPLICABLE.

8) STEEL PLATES JOINING METHOD SHOWN ARE INTENDED FOR REFERENCES ONLY, FINAL STEEL JOINING METHOD SHALL BE DETERMINE BY FABRICATOR TO SUIT THEIR SHOP PREFERENCES.

9) THE TANK SHALL BE PRESSURE TESTED TO HOLD WATER AT FULL CAPACITY AT 75 PSI PRIOR SHIPMENT.

10) THIS DRAWINGS IS THE PROPERTY OF GROUND/WATER TREATMENT & TECHNOLOGY, INC

NO.	REVISIONS	DATE
A	FOR QUOTATION	06/28/05

2000 LBS LIQUID PHASE ADSORPTION TANK
GENERAL ARRANGEMENT & DETAILS

SCALE: NONE
DATE: 06/27/05
APPROVED:
DRAWN BY: TLo

GROUNDWATER TREATMENT & TECHNOLOGY
P.O. BOX 1174
DENVILLE, NJ 07834

FILE: 11-1181
DRAWING NUMBER: M-02

Appendix E: Volume of Groundwater Pumped

Effluent Discharge
Groundwater Treatment System
Pascoag, RI

Date	Monitoring Period Discharge (Gallons Per Day)	Monitoring Period Discharge (Gallons Per Sampling Period)	Cumulative Volume Pumped (Gallons)
10/27/2009	13,450	184,800	184,800
11/3/2009	9,143	64,000	248,800
11/11/2009	10,154	81,230	330,030
11/23/2009	9,239	110,870	440,900
11/30/2009	8,400	58,800	499,700
12/7/2009	7,793	54,550	554,250
12/11/2009	8,415	33,660	587,910
12/21/2009	7,405	74,050	661,960
12/23/2009	6,548	13,095	675,055
12/30/2009	6,358	44,507	719,562
1/5/2010	6,015	36,088	755,650
1/22/2010	4,549	77,340	832,990
2/17/2010	3,806	98,960	931,950
3/5/2010	6,437	102,990	1,034,940
3/19/2010	3,945	55,225	1,090,165
4/8/2010	3,528	70,555	1,160,720
4/26/2010	8,374	150,730	1,311,450
5/13/2010	6,213	105,620	1,417,070
6/1/2010	5,788	109,970	1,527,040
6/15/2010	5,633	78,860	1,605,900
7/2/2010	5,365	91,200	1,697,100
7/20/2010	5,519	99,340	1,796,440
8/5/2010	4,962	79,390	1,875,830
8/24/2010	4,372	83,060	1,958,890
9/7/2010	3,081	43,130	2,002,020
9/28/2010	4,157	87,290	2,089,310
10/13/2010	2,885	43,270	2,132,580
10/26/2010	5,331	69,300	2,201,880
11/12/2010	4,200	71,400	2,273,280
11/30/2010	3,566	64,180	2,337,460
12/14/2010	5,301	74,220	2,411,680
12/28/2010	5,571	78,000	2,489,680
1/11/2011	2,699	37,790	2,527,470
1/25/2011	3,885	54,390	2,581,860
2/7/2011	4,352	56,580	2,638,440
2/21/2011	4,281	59,930	2,698,370
3/15/2011	5,717	125,770	2,824,140
4/6/2011	5,398	118,750	2,942,890
4/22/2011	5,026	80,420	3,023,310
5/4/2011	5,036	60,430	3,083,740
5/26/2011	4,536	99,790	3,183,530
6/10/2011	3,821	57,320	3,240,850
6/30/2011	4,005	80,090	3,320,940
7/18/2011	3,919	70,550	3,391,490
8/5/2011	3,631	65,360	3,456,850
8/22/2011	4,379	74,440	3,531,290
9/9/2011	4,391	79,040	3,610,330

Effluent Discharge
Groundwater Treatment System
Pascoag, RI

Date	Monitoring Period Discharge (Gallons Per Day)	Monitoring Period Discharge (Gallons Per Sampling Period)	Cumulative Volume Pumped (Gallons)
9/26/2011	4,489	76,320	3,686,650
10/11/2011	4,390	65,850	3,752,500
10/24/2011	3,758	48,860	3,801,360
11/11/2011	4,903	88,260	3,889,620
12/1/2011	4,344	86,880	3,976,500
12/22/2011	4,467	93,800	4,070,300
1/9/2012	4,106	73,900	4,144,200
2/17/2012	3,120	121,670	4,265,870
3/1/2012	3,330	43,285	4,309,155
3/16/2012	3,744	56,165	4,365,320
3/29/2012	3,428	44,560	4,409,880
4/12/2012	3,298	46,174	4,456,054
4/30/2012	2,882	51,879	4,507,933
5/15/2012	2,652	39,781	4,547,714
6/1/2012	2,905	49,381	4,597,095
6/15/2012	2,677	37,477	4,634,572
6/29/2012	2,638	36,933	4,671,505
7/17/2012	4,601	82,813	4,754,318
7/30/2012	6,964	90,530	4,844,848
8/14/2012	5,380	80,697	4,925,545
8/27/2012	6,252	81,270	5,006,815
9/12/2012	6,264	100,230	5,107,045
9/28/2012	5,300	84,805	5,191,850
10/12/2012	4,902	68,630	5,260,480
10/25/2012	4,824	62,715	5,323,195
11/9/2012	4,970	74,555	5,397,750
11/30/2012	4,359	91,540	5,489,290
12/13/2012	6,381	82,950	5,572,240
12/27/2012	5,338	74,730	5,646,970
1/11/2013	5,301	79,510	5,726,480
1/28/2013	4,676	79,495	5,805,975
2/13/2013	4,408	70,525	5,876,500
2/26/2013	4,449	57,840	5,934,340
3/13/2013	5,452	81,780	6,016,120
3/29/2013	5,074	81,180	6,097,300
4/11/2013	4,712	61,255	6,158,555
4/26/2013	4,444	66,657	6,225,212
5/10/2013	3,878	54,293	6,279,505
5/24/2013	3,153	44,140	6,323,645
6/10/2013	3,406	57,900	6,381,545
6/24/2013	4,581	64,130	6,445,675
7/8/2013	4,073	57,017	6,502,692
Average Daily Flow	5,081		--

Appendix F: Groundwater Data Proximate to Treatment System

- **F.1. Groundwater Sampling Data**
- **F.2. Concentration Trending Graphs**

F.1. Groundwater Sampling Data

Quarterly Groundwater Analytical Results
Pascoag, Rhode Island

Monitoring Well	Sample Date	Depth to Groundwater	Compound (µg/l)																											
			Benzene		n-Butylbenzene		sec-Butylbenzene		Ethylbenzene		Isopropylbenzene		p-Isopropytoluene		MTBE		Naphthalene		n-Propylbenzene		Styrene		Toluene		1,2,4-Trimethylbenzene		1,3,5-Trimethylbenzene		Total Xylenes	
GA Groundwater Objectives			**5**		**NE**		**NE**		**700**		**NE**		**NE**		**40**		**20**		**NE**		**100**		**1,000**		**NE**		**NE**		**10,000**	
MW-18s	10/19/2006 *	NA	**150**		NA		NA		**87**		NA		NA		**3,600**		**61**		NA		NA		30	U	NA		NA		16	U
	10/13/2009	4.61	**1.9**		**4.7**		**5.0**		**4.4**		**14**		1.0	U	**200**		**4.4**		1.0	U	1.0	U	1.0	U	**3.4**		1.0	U	3.0	U
	1/22/2010	4.05	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.4**		5.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/26/2010	4.32	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.2**		5.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/20/2010	5.12	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.5**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	9/14/2010	4.98	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.8**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/25/2011	4.33	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**5.2**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/22/2011	4.45	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	4.94	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	10/31/2011	2.54	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	3.71	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/30/2012	3.06	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	8/9/2012	3.86	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/29/2012	3.28	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
MW-18d	10/19/2006 *	NA	**400**		NA		NA		**800**		NA		NA		**5,500**		**190**		NA		NA		**38**		NA		NA		**30**	
	10/13/2009	4.24	**41**		**5.4**		**10**		**140**		**61**		**10**		**600**		**52**		**53**		1.0	U	1.0	U	**19**		1.0	U	**12**	
	1/22/2010	3.41	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.1**		5.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/26/2010	4.00	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		5.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/20/2010	4.80	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U	3.0	U
	9/14/2010	4.86	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**46**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/25/2011	4.02	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.7**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/22/2011	4.06	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.6**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	4.68	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.9**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	10/31/2011	2.06	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	3.37	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/30/2012	2.91	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	8/9/2012	3.75	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/29/2012	3.11	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U

Quarterly Groundwater Analytical Results
Pascoag, Rhode Island

Monitoring Well	Sample Date	Depth to Groundwater	Compound (µg/l)																											
			Benzene		**n-Butylbenzene**		**sec-Butylbenzene**		**Ethylbenzene**		**Isopropylbenzene**		**p-Isopropytoluene**		**MTBE**		**Naphthalene**		**n-Propylbenzene**		**Styrene**		**Toluene**		**1,2,4-Trimethylbenzene**		**1,3,5-Trimethylbenzene**		**Total Xylenes**	
GA Groundwater Objectives			**5**		**NE**		**NE**		**700**		**NE**		**NE**		**40**		**20**		**NE**		**100**		**1,000**		**NE**		**NE**		**10,000**	
MW-28s	10/19/2006 *	NA	**2.6**		NA		NA		**2.6**		NA		NA		**950**		5.0	U	NA		NA		6.0	U	NA		NA		11	U
	10/13/2009	7.31	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**39**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/22/2010	6.80	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/26/2010	6.82	1.0	U	1.0	U	1.0	U	**1.2**		1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/20/2010	7.5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**6.2**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	9/14/2010	7.58	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**15**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/25/2011	6.95	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.4**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/22/2011	6.9	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	7.38	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**89**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	10/31/2011	5.08	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	6.08	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	10.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/30/2012	5.38	1.0	U	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	8/9/2012	6.45	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/29/2012	5.85	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
MW-28d	10/19/2006 *	NA	**360**		NA		NA		**1,600**		NA		NA		**1,100**		**240**		NA		NA		**1,700**		NA		NA		2.0	U
	10/13/2009	6.96	**68**		**32**		**18**		**720**		**81**		**8.7**		**190**		**130**		**180**		1.0	U	**150**		**540**		**320**		**1,860**	
	1/22/2010	6.48	**36**		**30**		**10**		**640**		**64**		**5.8**		**110**		**80**		**140**		1.0	U	**93**		**530**		**190**		**1,360**	
	4/26/2010	6.60	**58**		50	U	50	U	**850**		**62**		50.0	U	**120**		100	U	**130**		50	U	**750**		**720**		**190**		**2,550**	
	7/20/2010	7.28	**16**		**4.4**		**3.5**		**200**		**20**		2.0	U	**140**		**17**		**42**		2.0	U	2.0	U	**59**		2.0	U	**52**	
	9/14/2010	7.34	**31**		**11**		10.0	U	**550**		**48**		10.0	U	**100**		**84**		**100**		10.0	U	**170**		**390**		**120**		**1,200**	
	1/25/2011	6.58	**7.7**		**2.5**		1.0	U	**53**		**3.5**		1.0	U	**36**		**6.3**		**6.4**		1.0	U	**8.9**		**57**		**23**		**208**	
	4/22/2011	6.55	**22**		**18**		10.0	U	**490**		**45**		10.0	U	**75**		**74**		**97**		10.0	U	**230**		**450**		**96**		**1,160**	
	7/18/2011	7.11	**15**		**15**		10.0	U	**420**		**39**		10.0	U	**60**		**100**		**85**		10.0	U	**28**		**350**		**80**		**760**	
	10/31/2011	4.84	50	U	50	U	50	U	**760**		**58**		50.0	U	**67**		**280**		**120**		50.0	U	**130**		**680**		**170**		**2,050**	
	1/9/2012	--	**19**		**16**		10.0	U	**510**		**43**		10.0	U	**49**		100	U	**92**		10.0	U	**21**		**450**		**110**		**1,170**	
	4/30/2012	5.21	**13**		10.0	U	10.0	U	**390**		**34**		10.0	U	**53**		**54**		**74**		10.0	U	**26**		**430**		**100**		**707**	
	8/9/2012	6.2	**10**		**12**		**5.4**		**230**		**28**		5.0	U	**37**		**44**		**61**		5.0	U	**8**		**230**		**33**		**263**	
	11/29/2012	5.64	1.0	U	1.0	U	1.0	U	**5.9**		1.0	U	1.0	U	**6.4**		2.0	U	1.0	U	1.0	U	**1.3**		**4.6**		**1**		**13.6**	

Quarterly Groundwater Analytical Results
Pascoag, Rhode Island

Monitoring Well	Sample Date	Depth to Groundwater	Compound (µg/l)																											
			Benzene		**n-Butylbenzene**		**sec-Butylbenzene**		**Ethylbenzene**		**Isopropylbenzene**		**p-Isopropytoluene**		**MTBE**		**Naphthalene**		**n-Propylbenzene**		**Styrene**		**Toluene**		**1,2,4-Trimethylbenzene**		**1,3,5-Trimethylbenzene**		**Total Xylenes**	
GA Groundwater Objectives			**5**		**NE**		**NE**		**700**		**NE**		**NE**		**40**		**20**		**NE**		**100**		**1,000**		**NE**		**NE**		**10,000**	
MW-45d	10/19/2006 *	NA	**320**		NA		NA		**480**		NA		NA		**1,600**		**160**		NA		NA		**59**		NA		NA		4.0	U
	10/14/2009	4.77	**65**		**10**		**11**		**280**		**51**		**7.2**		**200**		**93**		**100**		1.0	U	**4.6**		**200**		**18**		**229**	
	1/22/2010	4.35	**33**		**5.6**		**4.1**		**160**		**28**		**1.5**		**120**		**21**		**40**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/26/2010	4.28	**17**		**1.4**		**2.6**		**68**		**17**		1.0	U	**78**		**4.9**		**21**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/20/2010	4.89	**11**		1.0	U	**1.7**		**13**		**11**		1.0	U	**77**		2.0	U	**8**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	9/14/2010	4.96	**8.6**		1.0	U	**1.1**		**1.7**		**8.2**		1.0	U	**68**		2.0	U	**6.7**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/25/2011	4.55	**3.2**		1.0	U	1.0	U	1.0	U	**4.2**		1.0	U	**40**		2.0	U	**1.3**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/22/2011	4.15	**3.7**		1.0	U	**1.4**		**9.1**		**7.2**		1.0	U	**43**		**4.7**		**5.8**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	4.92	1.0	U	1.0	U	1.0	U	1.0	U	**3.5**		1.0	U	**33**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	10/31/2011	2.94	**1.1**		1.0	U	1.0	U	1.0	U	**2.3**		1.0	U	**23**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	3.78	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**5.7**		10.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/30/2012	3	1.0	U	1.0	U	1.0	U	1.0	U	**2.1**		1.0	U	**17**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	8/10/2012	3.74	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	11/30/2012	3.51	**1.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.8**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
MW-49r	10/24/2006 *	NA	**25**		NA		NA		**31**		NA		NA		**260**		**7.9**		NA		NA		**5.1**		NA		NA		**35.9**	
	10/14/2009	3.12	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**4.8**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0		3.0	U
	1/22/2010	2.8	**1.0**		2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	**12**		1.0	U	2.0	U	2.0	U	2.0	U	2.0	U	1.0		3.0	U
	4/26/2010	2.9	**35**		5.0	U	5.0	U	5.0	U	**23**		5.0	U	**180**		**16**		**28**		5.0	U	5.0	U	**43**		**28**		**44**	
	7/20/2010	3.28	**12**		**3.4**		**2.3**		**24**		**12**		1.0	U	**51**		**8.3**		**14**		1.0	U	1.0	U	**12**		**10**		**8.5**	
	9/14/2010	3.34	**3.1**		**1.2**		1.0	U	**3.6**		**3.3**		1.0	U	**7.6**		**3.1**		**4.2**		1.0	U	1.0	U	**2.4**		**2.3**		3.0	U
	1/25/2011	2.7	**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**3.5**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/22/2011	3.04	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**7.4**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	3.08	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	10/31/2011	0.98	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	2.05	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.2**		10.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U

Quarterly Groundwater Analytical Results
Pascoag, Rhode Island

Monitoring Well	Sample Date	Depth to Groundwater	Compound (µg/l)																											
			Benzene		n-Butylbenzene		sec-Butylbenzene		Ethylbenzene		Isopropylbenzene		p-Isopropytoluene		MTBE		Naphthalene		n-Propylbenzene		Styrene		Toluene		1,2,4-Trimethylbenzene		1,3,5-Trimethylbenzene		Total Xylenes	
GA Groundwater Objectives			**5**		**NE**		**NE**		**700**		**NE**		**NE**		**40**		**20**		**NE**		**100**		**1,000**		**NE**		**NE**		**10,000**	
MW-58s	10/19/2006 *	NA	**1,800**		NA		NA		**2,800**		NA		NA		**250**		**4,500**		NA		NA		**12,000**		NA		NA		80	U
	10/13/2009	10.84	**360**		**42**		**26**		**1,400**		**140**		**10**		**590**		**460**		**340**		**16**		**460**		**1,100**		**520**		**3,400**	
	1/22/2010	8.85	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**210**		5.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	4/26/2010	11.08	**30**		5.0	U	5.0	U	**140**		**10**		5.0	U	**78**		**10**		**15**		5.0	U	5.0	U	**47**		5.0	U	**86.9**	
	7/20/2010	11.9	**130**		5.0	U	5.0	U	**410**		**36**		5.0	U	**89**		**91**		**68**		5.0	U	**69**		**110**		5.0	U	**221**	
	9/14/2010	11.94	**340**		5.0	U	5.0	U	1.0	U	**49**		5.0	U	**200**		**150**		**92**		5.0	U	**530**		**390**		**29**		**1,290**	
	1/25/2011	10.85	**6.6**		1.0	U	1.0	U	**6.6**		**2.2**		1.0	U	**34**		**7.1**		**3.1**		1.0	U	1.0	U	**1.3**		**1.3**		3.0	U
	4/22/2011	10.4	**2.9**		1.0	U	1.0	U	**8.3**		1.0	U	1.0	U	**14**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	11.48	**35**		1.0	U	1.0	U	**3.7**		**14**		1.0	U	**35**		**32**		**12**		1.0	U	**1.2**		1.0	U	1.0	U	3.0	U
	10/31/2011	8.19	**12.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**22**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	9.75	**1.2**		1.0	U	1.0	U	**8.0**		**1.5**		1.0	U	**5.2**		10.0	U	1.0	U	1.0	U	1.0	U	**3.6**		1.0	U	3.0	U
	5/4/2012	8.85	**3.0**		1.0	U	1.0	U	**1.1**		**1.2**		1.0	U	**7.9**		2.0	U	1.0	U	1.0	U	1.0	U	**4.4**		1.0	U	**7.9**	
	8/9/2012	10.51	**38**		**2.4**		**2.3**		**40**		**30**		1.0	U	**25**		**70**		**20**		1.0	U	1.0	U	**1.2**		1.0	U	3.0	U
	11/29/2012	9.5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.4**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
MW-58d	10/19/2006 *	NA	**790**		NA		NA		**2,900**		NA		NA		**1,600**		**290**		NA		NA		**9,200**		NA		NA		6.0	U
	10/13/2009	8.81	**190**		**47**		**27**		**1,700**		**140**		**12**		**330**		**480**		**360**		**16**		**4,200**		**1,400**		**570**		**5,800**	
	1/22/2010	7.81	**97**		**38**	U	**11**	U	**2,100**		110	U	**6.3**		**170**		**180**		**260**		1.0	U	**6,300**		1	U	1.0	U	**7,900**	
	4/26/2010	9.18	**330**		100	U	100	U	**2,500**		100	U	**130**		**120**		100	U	**280**		100	U	**7,500**		**2,100**		**480**		**10,200**	
	7/20/2010	9.85	**160**		100	U	100	U	**1,700**		**100**		100	U	**230**		200	U	**230**		100	U	**3,300**		**1,700**		**400**		**6,500**	
	9/14/2010	9.98	**160**		**37**		25.0	U	**1,700**		**100**		25.0	U	**220**		**210**		**230**		25.0	U	**2,500**		**1,400**		**370**		**5,700**	
	1/25/2011	9.28	**23**		**3.0**		**1.4**		**120**		**13**		1.0	U	**79**		**42**		**25**		1.0	U	**38**		**44**		**8.8**		**89**	
	4/22/2011	10.05	**220**		50.0	U	50.0	U	**1,900**		**110**		50.0	U	**70**		**310**		**250**		50.0	U	**6,300**		**1,900**		**400**		**8,000**	
	7/18/2011	9.65	**120**		**40**		**11**		**1,700**		**110**		10.0	U	**97**		**280**		**250**		10.0	U	**3,200**		**1,500**		**400**		**7,700**	
	10/31/2011	6.82	**70**		50.0	U	50.0	U	**1,100**		**68**		50.0	U	**52**		**280**		**140**		50.0	U	**1,300**		**970**		**210**		**4,000**	
	1/9/2012	8.11	**33**		5.0	U	5.0	U	**330**		**23**		5.0	U	**19**		50	U	**31**		5.0	U	**5.6**		**72**		5.0	U	**152**	
	5/4/2012	8.05	**78**		**22**		20	U	**1,300**		**91**		20	U	**47**		**210**		**220**		20.0	U	**360**		**1,500**		**310**		**4,100**	
	8/9/2012	8.58	**52**		**29**		20.0	U	**1,100**		**67**		20.0	U	**45**		**130**		**170**		20.0	U	**160**		**1,100**		**270**		**3,600**	
	11/29/2012	7.85	1.0	U	1.0	U	1.0	U	**16**		**3.4**		1.0	U	**5.6**		**5.3**		**4.6**		1.0	U	1.0	U	1.0	U	1.0	U	3.0	U

Quarterly Groundwater Analytical Results
Pascoag, Rhode Island

Monitoring Well	Sample Date	Depth to Groundwater	Compound (µg/l)																											
			Benzene		n-Butylbenzene		sec-Butylbenzene		Ethylbenzene		Isopropylbenzene		p-Isopropytoluene		MTBE		Naphthalene		n-Propylbenzene		Styrene		Toluene		1,2,4-Trimethylbenzene		1,3,5-Trimethylbenzene		Total Xylenes	
GA Groundwater Objectives			**5**		**NE**		**NE**		**700**		**NE**		**NE**		**40**		**20**		**NE**		**100**		**1,000**		**NE**		**NE**		**10,000**	
MW-59d	10/19/2006 *	NA	**0.85**		NA		NA		3.0	U	NA		NA		**360**		3.0	U	NA		NA		3.0	U	NA		NA		2.0	U
	10/14/2009	5.17	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**32**		**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/22/2010	NM	--		--		--		--		--		--		--		--		--		--		--		--		--		--	
	4/26/2010	4.02	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**1.0**		**1.0**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/20/2010	4.88	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	9/14/2010	4.98	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**13**		2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/25/2011	NM	--		--		--		--		--		--		--		--		--		--		--		--		--		--	
	4/22/2011	4.08	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	7/18/2011	4.76	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	10/31/2011	2.58	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**2.2**		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U
	1/9/2012	3.5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	10.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.0	U

Notes:

BOLD = Detection

BOLD and SHADED = Exceeds the GA Groundwater Objective

U = Below Reported Laboratory Detection Limits

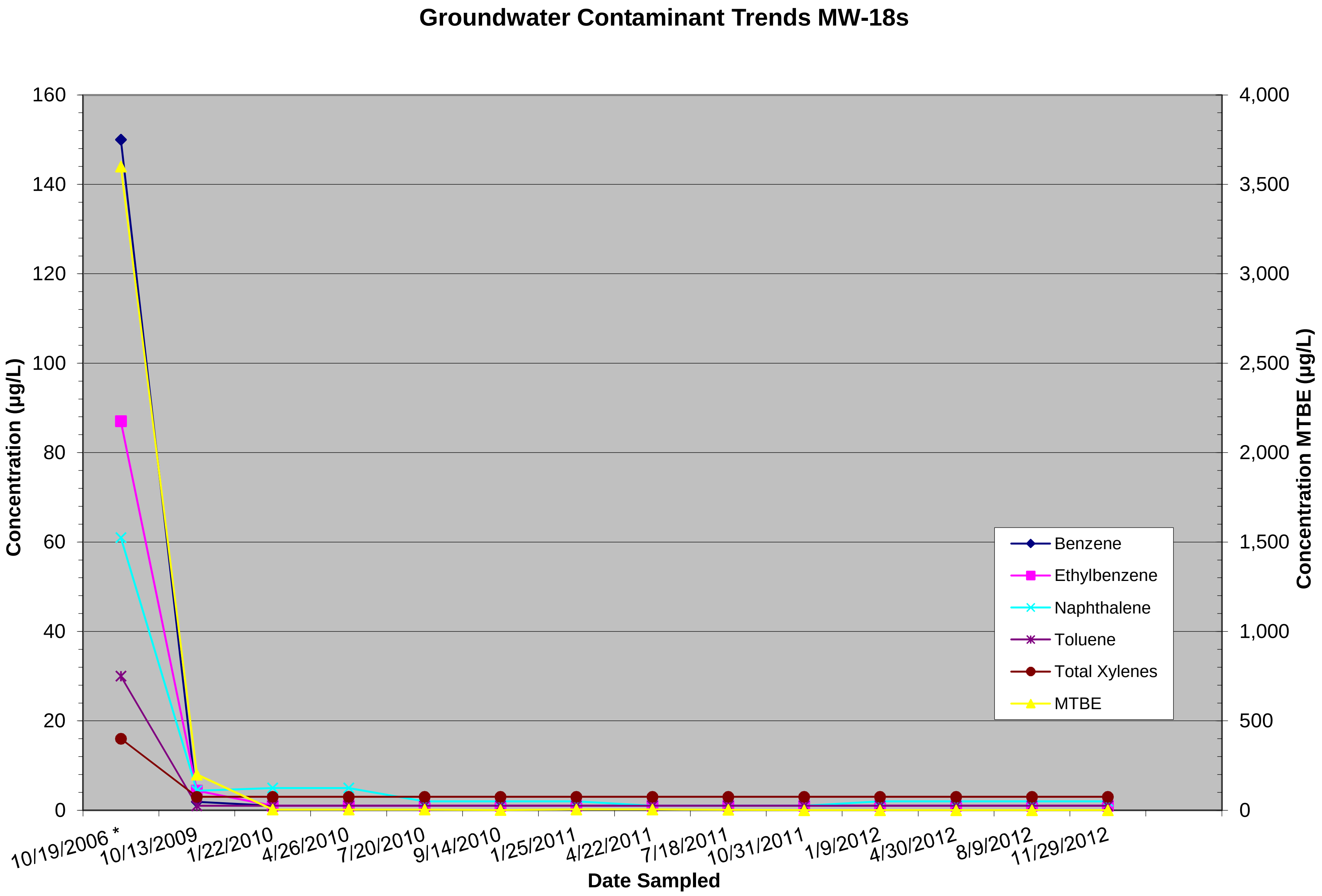
NA = Not Available

NE = No Established Standard

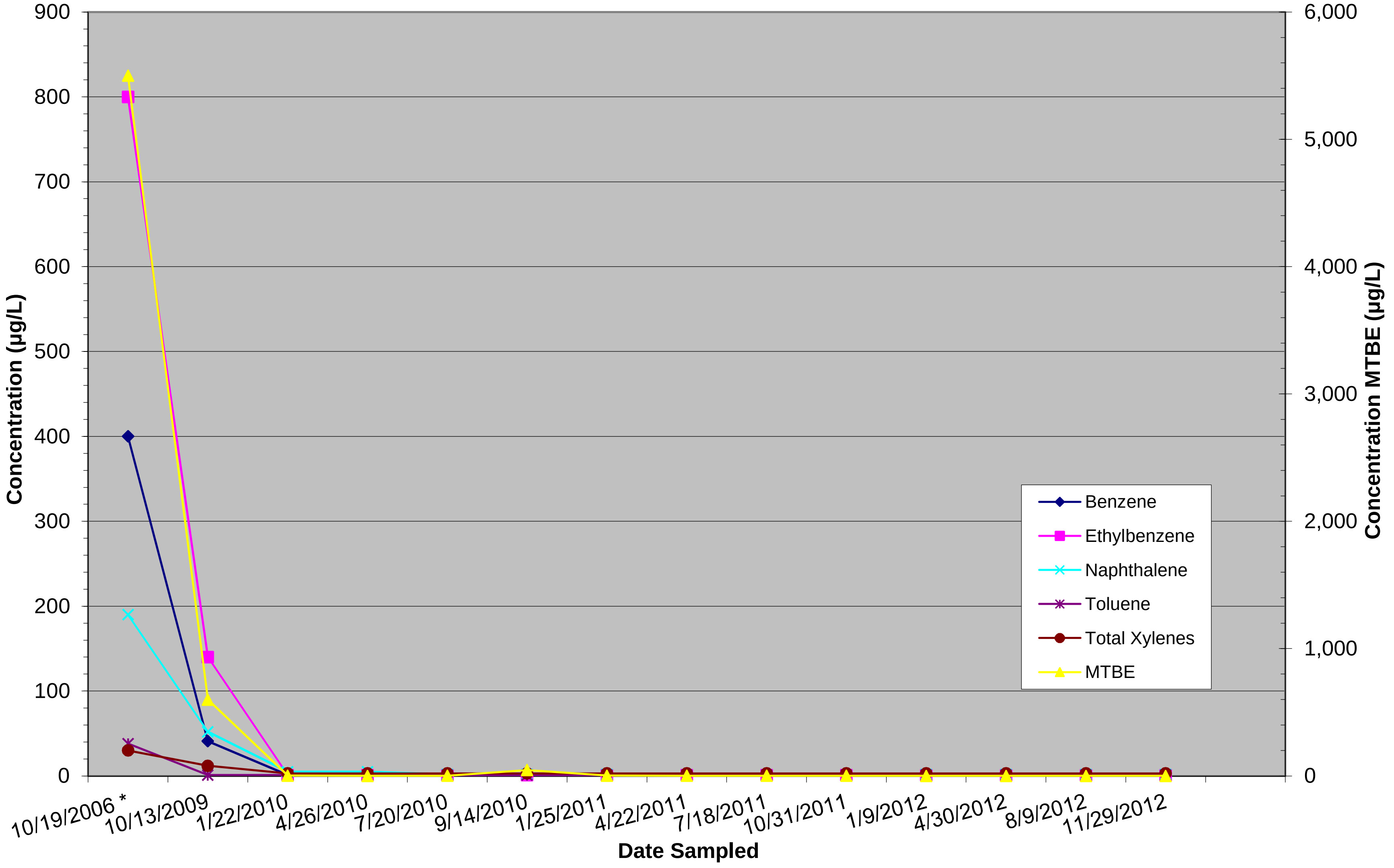
* = Latest RIDEM sampling data

NM = Not measured (Well inaccessible)

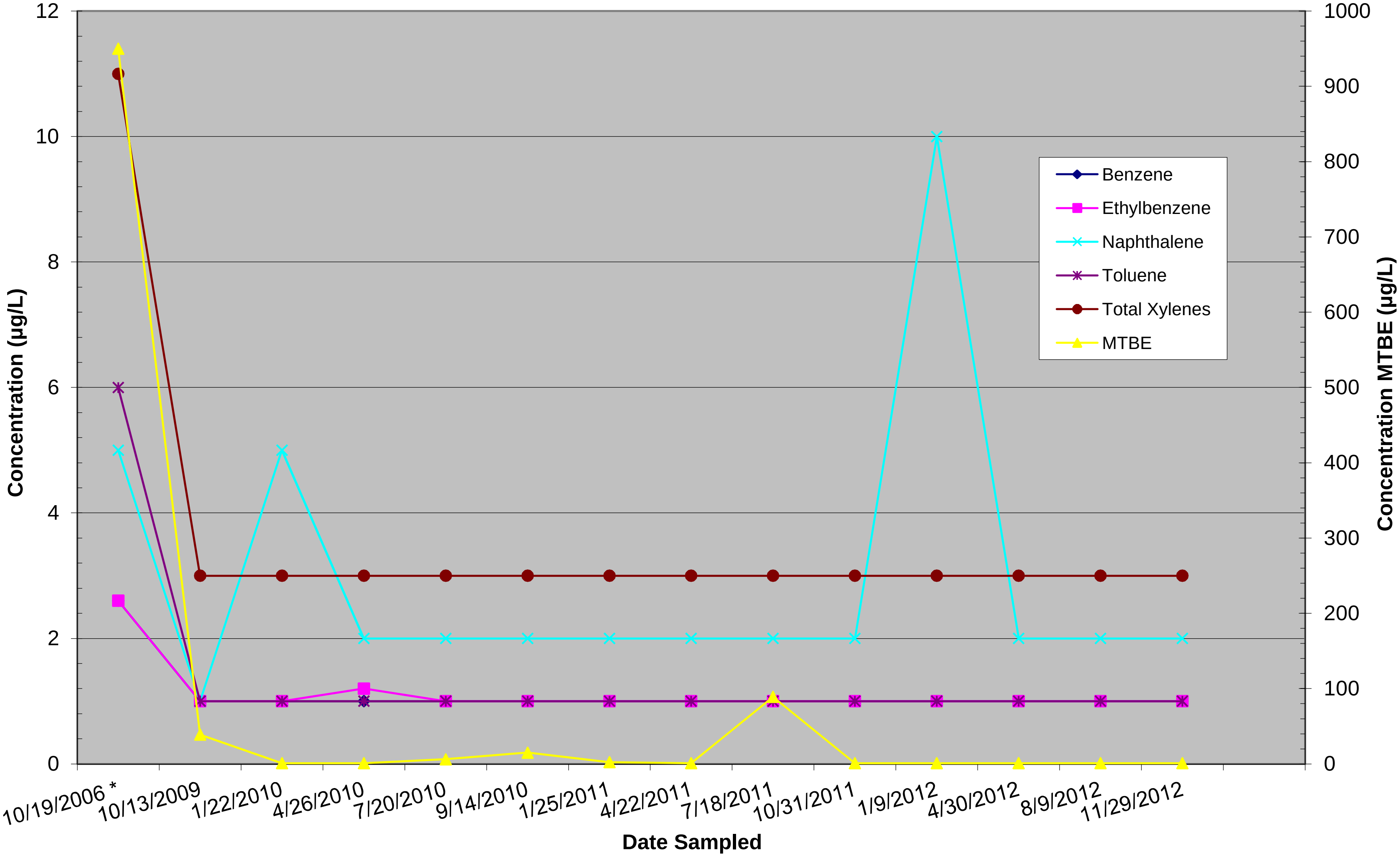
F.2. Concentration Trending Graphs


Groundwater Contaminant Trends MW-18s
Concentration (µg/L)
160
140
120
100
80
60
40
20
0
Concentration MTBE (µg/L)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Benzene
Ethylbenzene
Naphthalene
Toluene
Total Xylenes
MTBE
10/19/2006 *
10/13/2009
1/22/2010
4/26/2010
7/20/2010
9/14/2010
1/25/2011
4/22/2011
7/18/2011
10/31/2011
1/9/2012
4/30/2012
8/9/2012
11/29/2012
Date Sampled

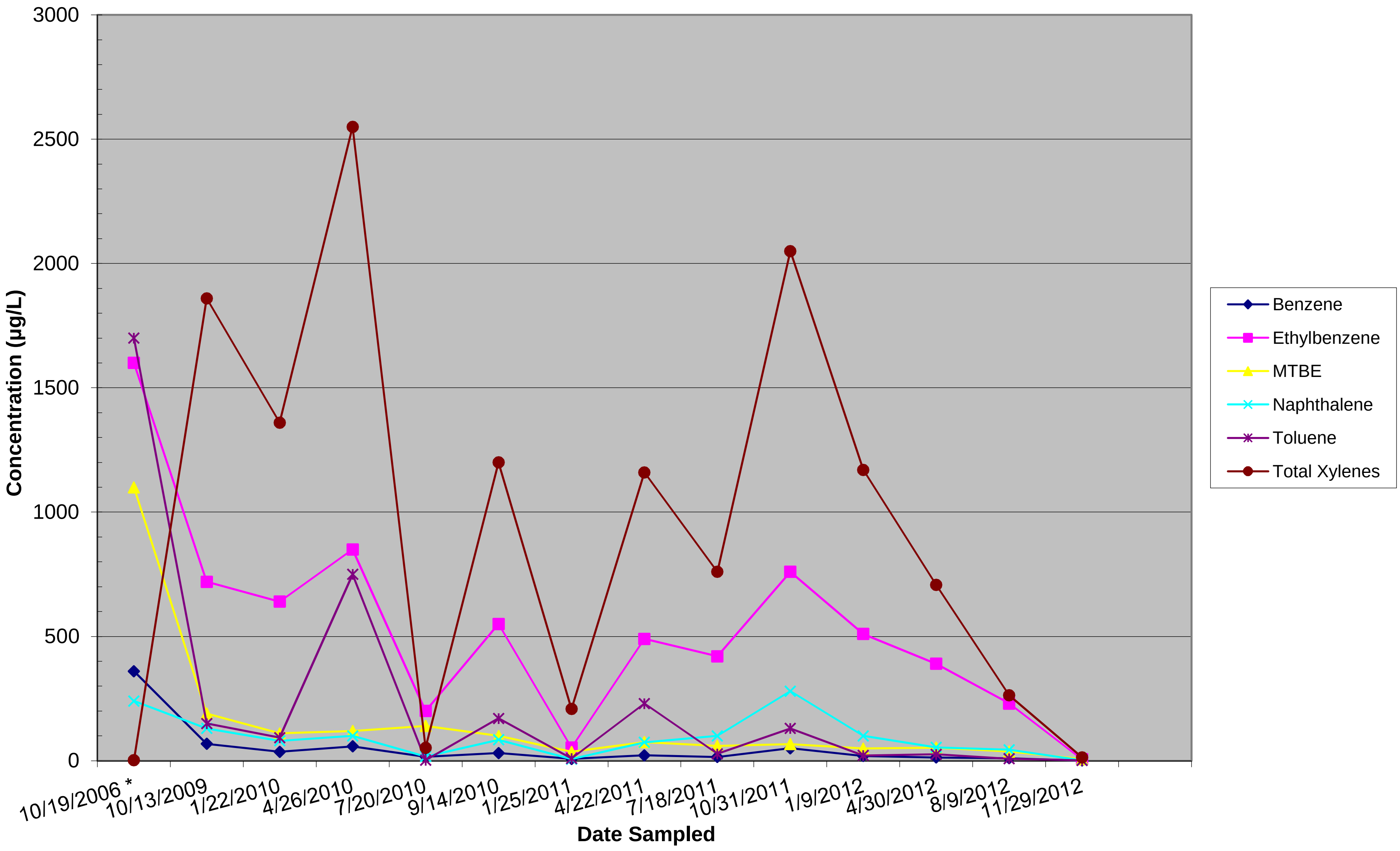
Groundwater Contaminant Trends MW-18d



Groundwater Contaminant Trends MW-28s

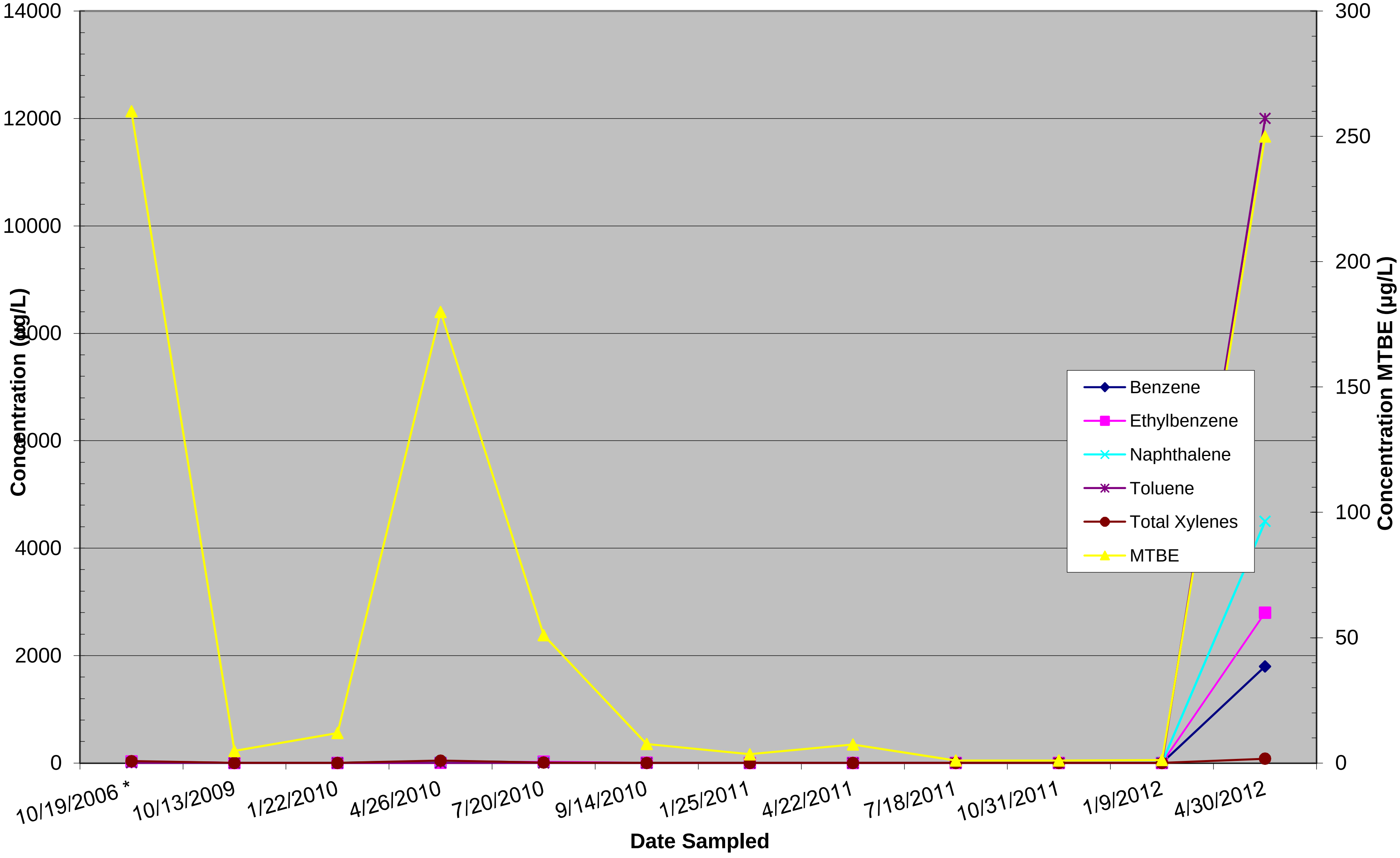


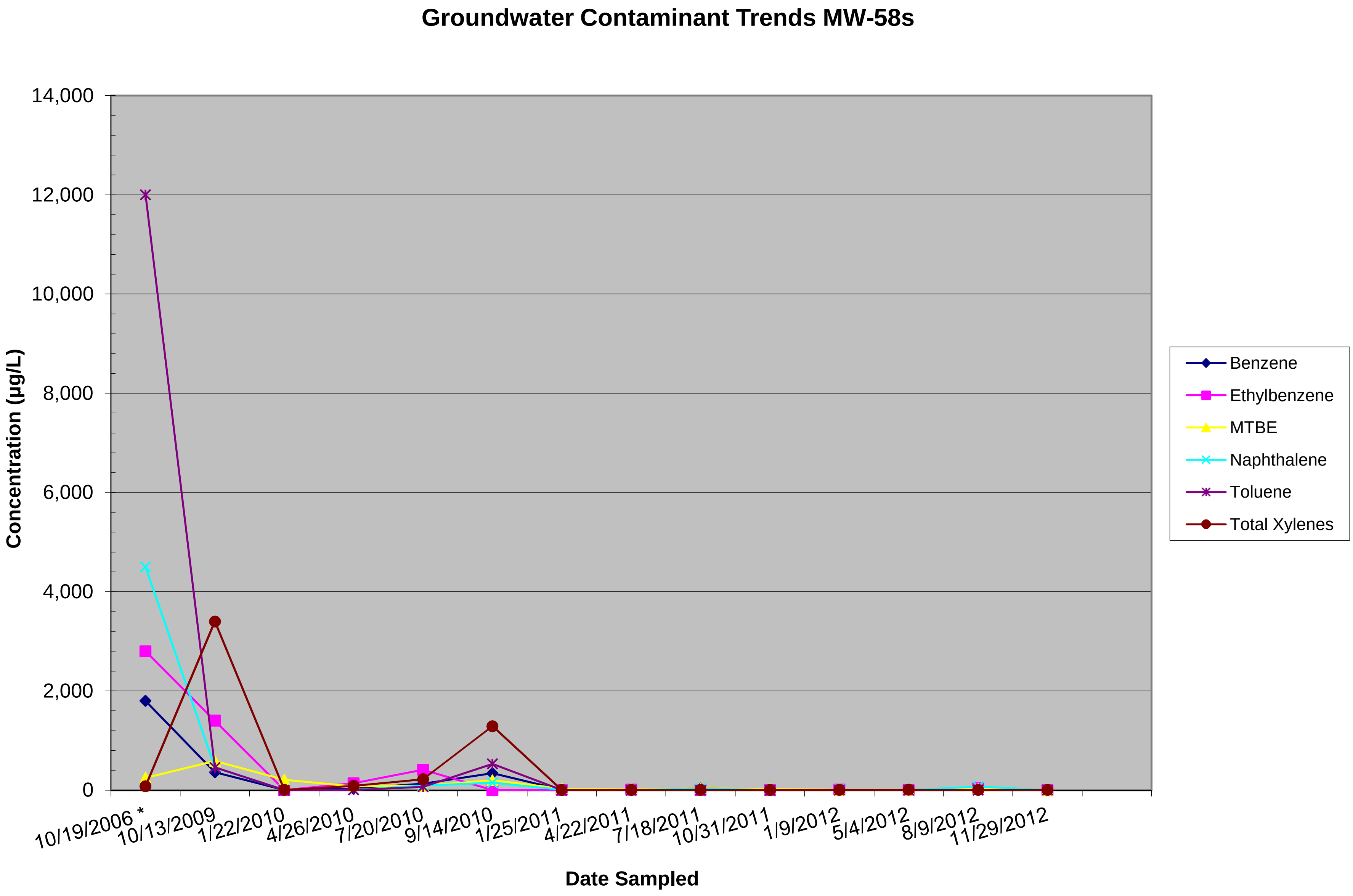
Groundwater Contaminant Trends MW-28d

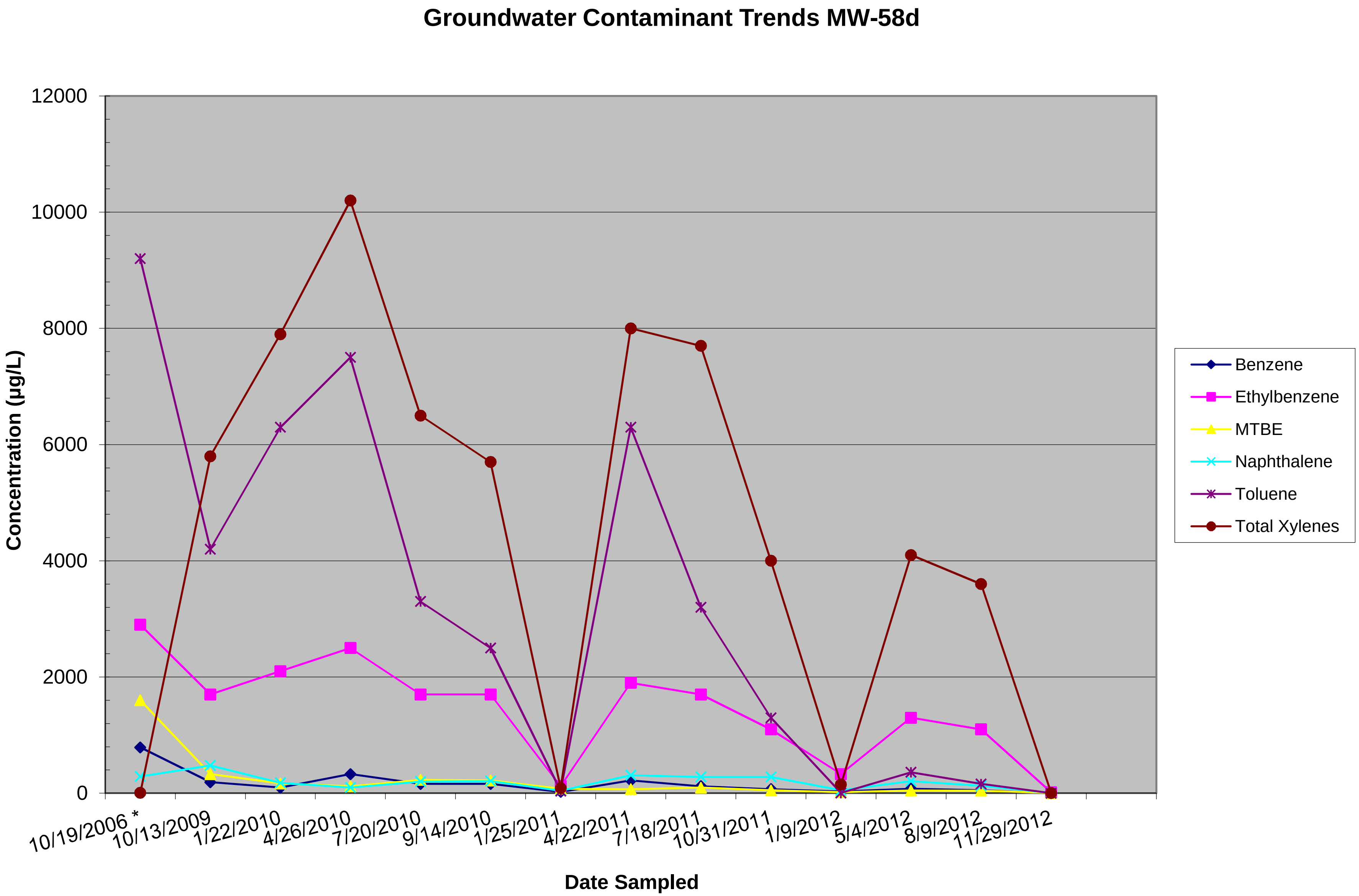



Groundwater Contaminant Trends MW-45d
Concentration (µg/L)
1800
1600
1400
1200
1000
800
600
400
200

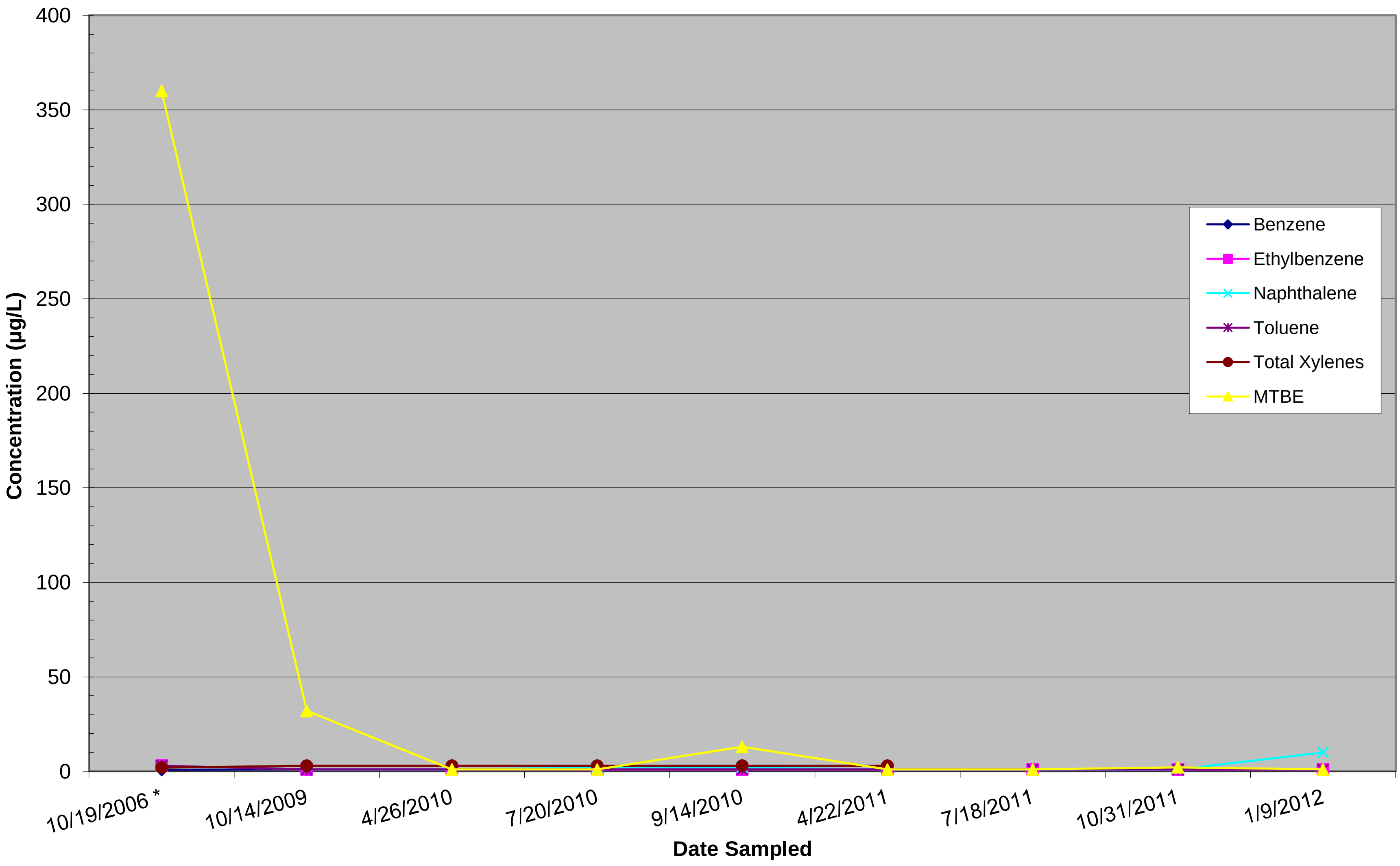
Groundwater Contaminant Trends MW-49r




Groundwater Contaminant Trends MW-58s
Concentration (µg/L)
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
10/19/2006 *
10/13/2009
1/22/2010
4/26/2010
7/20/2010
9/14/2010
1/25/2011
4/22/2011
7/18/2011
10/31/2011
1/9/2012
5/4/2012
8/9/2012
11/29/2012
Date Sampled
Benzene
Ethylbenzene
MTBE
Naphthalene
Toluene
Total Xylenes


Groundwater Contaminant Trends MW-58d
Concentration (µg/L)
12000
10000
8000
6000
4000
2000
0
10/19/2006 *
10/13/2009
1/22/2010
4/26/2010
7/20/2010
9/14/2010
1/25/2011
4/22/2011
7/18/2011
10/31/2011
1/9/2012
5/4/2012
8/9/2012
11/29/2012
Date Sampled
Benzene
Ethylbenzene
MTBE
Naphthalene
Toluene
Total Xylenes

Groundwater Contaminant Trends MW-59d



Appendix G: Pumping Wells Flow Meter Records

		Totalizer Readings (Gals)												
Date	Time	WP #1		Pumping Rate (gpm)	WP #2		Pumping Rate (gpm)	58BR		Pumping Rate (gpm)	28BR		Pumping Rate (gpm)	Discharge
7/17/2012		2,304,410			1,716,430			14,815			13,373			4,754,318
7/30/2012		2,320,490	16,080	0.859	1,723,568	7,138	0.381	6,225	26,130	1.396	43,010	29,637	1.583	4,844,848
8/14/2012		2,336,034	15,544	0.720	1,732,253	8,685	0.402	20,035	13,810	0.639	72,761	29,751	1.377	4,925,545
8/27/2012		2,353,030	16,996	0.908	1,742,715	10,462	0.559	30,493	10,458	0.559	104,027	31,266	1.670	5,006,815
9/11/2012	13:30	2,373,180	20,150	0.933	1,761,050	18,335	0.849	38,789	8,296	0.384	138,147	34,120	1.580	
9/12/2012	12:00	2,374,415	1,235	0.915	1,762,152	1,102	0.816	38,789		-	140,178	2,031	1.504	5,107,045
9/28/2012	9:00	2,395,575	21,160	0.926	1,779,730	17,578	0.769	--			174,050	33,872	1.482	5,191,850
10/12/2012	9:00	2,415,020	19,445	0.965	1,792,350	12,620	0.626	--			201,626	27,576	1.368	5,260,480
10/25/2012	9:00	2,433,305	18,285	0.977	1,806,245	13,895	0.742	--			224,085	22,459	1.200	5,323,195
11/9/2012	9:00	2,455,360	22,055	1.021	1,825,910	19,665	0.910	--			247,792	23,707	1.098	5,397,750
11/30/2012	9:00	2,484,750	29,390	0.972	1,845,500	19,590	0.648	--			277,718	29,926	0.990	5,489,290
12/4/2012											283,427	5,709		
12/13/2012	14:00	2,502,315	17,565	0.918	1,855,090	9,590	0.501	65,964	--	--	12,102	12,102	0.934	5,572,240
12/27/2012	9:00	2,520,500	18,185	0.902	1,865,365	10,275	0.510	82,553	16,589	0.823	32,655	20,553	1.019	5,646,970
1/11/2013	14:00	2,540,449	19,949	0.911	1,876,785	11,420	0.521	93,990	11,437	0.522	59,935	27,280	1.346	5,726,480
1/28/2013	13:30	2,561,435	20,986	0.857	1,888,235	11,450	0.468	102,176	8,186	0.334	90,218	30,283	1.237	5,805,975
2/13/2013	13:30	2,579,985	18,550	0.805	1,899,750	11,515	0.500	107,363	5,187	0.225	117,857	27,639	1.200	5,876,500
2/26/2013	9:30	2,594,500	14,515	0.791	1,909,915	10,165	0.554	111,915	4,552	0.248	139,615	21,758	1.185	5,934,340
3/13/2013	9:30	2,611,880	17,380	0.805	1,930,145	20,230	0.937	121,140	9,225	0.427	164,915	25,300	1.171	6,016,120
3/26/2013	13:30	2,629,615	17,735	0.762	1,949,482	19,337	0.831	130,045	8,905	0.383	190,436	25,521	1.096	6,097,300
4/11/2013	13:30	2,643,050	13,435	0.718	1,964,765	15,283	0.816	136,186	6,141	0.328	209,058	18,622	0.995	6,158,555
4/26/2013	13:30	2,657,530	14,480	0.670	1,982,015	17,250	0.799	142,487	6,301	0.292	229,497	20,439	0.946	6,225,212
5/10/2013	11:30	2,670,527	12,997	0.649	1,993,501	11,486	0.573	147,768	5,281	0.264	247,617	18,120	0.904	6,279,505
5/24/2013	13:30	2,683,562	13,035	0.647	2,001,775	8,274	0.410	--			265,411	17,794	0.883	6,323,645
6/10/2013	13:30	2,699,310	15,748	0.643	2,015,290	13,515	0.552	--			286,801	21,390	0.874	6,381,545
6/24/2013	13:30	2,713,605	14,295	0.709	2,038,580	23,290	1.155	--			305,271	18,470	0.916	6,445,675
7/8/2013	12:30	2,726,570	12,965	0.645	2,056,602	18,022	0.897	--			323,149	17,878	0.889	6,502,692

Appendix H: Monitoring Construction Logs

H.1. New Monitoring Well Construction Logs
H.2. Existing Monitoring Well Construction Logs

H.1. New Monitoring Well Construction Logs

BETA GROUP, INC.	SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: Summer Street, Pascoag, RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow Stem Auger & Air Hammer
DRILLED BY: Gary
INSPECTED BY: AAF

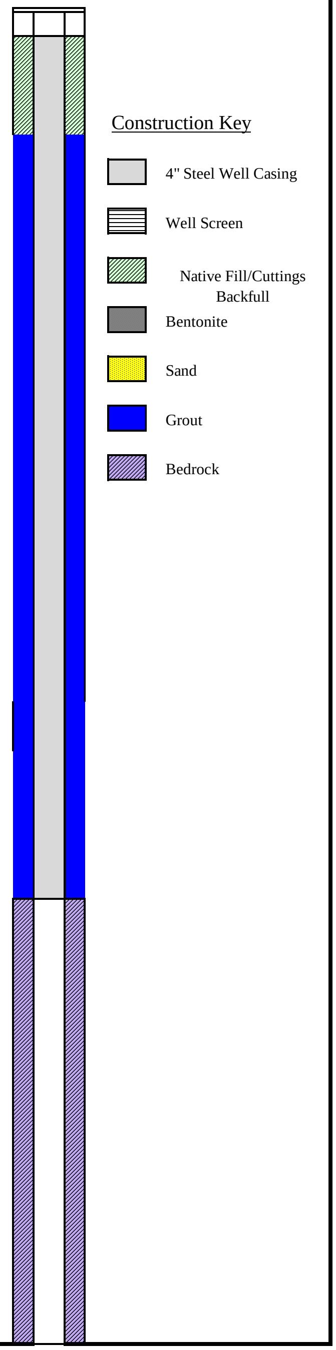
BORING/WELL NO. MW-59BR
PAGE 1 OF 2
DATE STARTED: 4/12/2012
DATE FINISHED: 4/16/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	CORE BARRE	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches)				SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)	MONITORING WELL CONSTRUCTION
			0-6	6-12	12-18	18-24			
								Topsoil	
10									
								Fine to coarse sand with some trace gravel. Overburden	
20									
								Top of Bedrock - Weathered Rock	
30									
40									
								Bedrock	
50									



BETA GROUP, INC.

SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: Summer Street, Pascoag, RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow Stem Auger & Air Hammer
DRILLED BY: Gary
INSPECTED BY: AAF

BORING/WELL NO. MW-59BR
PAGE 2 OF 2
DATE STARTED: 4/12/2012
DATE FINISHED: 4/16/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

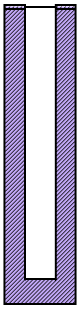
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	CORE BARRE	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
56								
60								Fractured Bedrock
								Bottom of Boring
70								

MONITORING WELL CONSTRUCTION



Construction Key

▢ 4" Steel Well Casing
▤ Well Screen
▨ Native Fill/Cuttings Backfull
■ Bentonite
🟨 Sand
🟦 Grout
▨ Bedrock

Notes: Well is 4-inches in diameter and is flush mounted with a road box. Casing made of steel.

BETA GROUP, INC.	SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: Summer Street, Pascoag, RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow Stem Auger & Air Hammer
DRILLED BY: Gary
INSPECTED BY: AAF

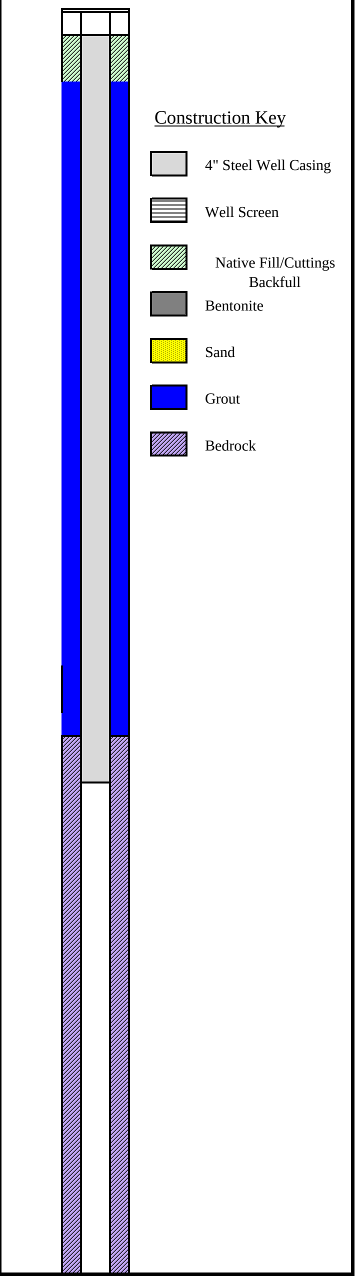
BORING/WELL NO. MW-58BR
PAGE 1 OF 2
DATE STARTED: 4/12/2012
DATE FINISHED: 4/19/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	CORE BARRE	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches)				SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)	MONITORING WELL CONSTRUCTION
			0-6	6-12	12-18	18-24			
								Topsoil	
10								Silt with some sand and trace clay. Overburden	
20									
								Tope of Bedrock - Weathered Rock	
30									
40								Bedrock	
50									



BETA GROUP, INC.

SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: Summer Street, Pascoag, RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow Stem Auger & Air Hammer
DRILLED BY: Gary
INSPECTED BY: AAF

BORING/WELL NO. MW-58BR
PAGE 2 OF 2
DATE STARTED: 4/12/2012
DATE FINISHED: 4/19/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

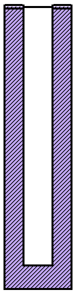
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	CORE BARRE	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
56								
60								Bedrock
								Bottom of Boring
70								

MONITORING WELL CONSTRUCTION



Construction Key

⬜ 4" Steel Well Casing
▤ Well Screen
▨ Native Fill/Cuttings Backfull
■ Bentonite
🟨 Sand
🟦 Grout
🟪 Bedrock

Notes: Well is 4-inches in diameter with a three foot stand-pipe. Casing made of steel.

BETA GROUP, INC.	SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: Summer Street, Pascoag, RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow-Stem Auger
DRILLED BY: Gary
INSPECTED BY: AAF

BORING/WELL NO. MW-59D
PAGE 1 OF 1
DATE STARTED: 4/13/2012
DATE FINISHED: 4/13/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

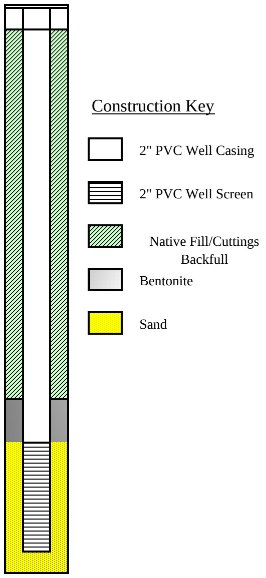
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
								Topsoil
10								
								Sand and silt with trace gravel
20								
26								Bottom of Boring
30								
40								
50								

MONITORING WELL CONSTRUCTION



Notes:
Well is 2-inches diameter PVC that is flush mounted with a road box. The 5 feet of screen is PVC 10-slot screen.

BETA GROUP, INC.	SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag
LOCATION: Summer Street, Pascoag, RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow-Stem Auger
DRILLED BY: Gary
INSPECTED BY: AAF

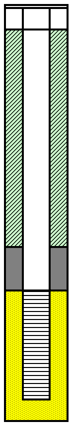
BORING/WELL NO. MW-59M
PAGE 1 OF 1
DATE STARTED: 4/13/2012
DATE FINISHED: 4/13/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)	MONITORING WELL CONSTRUCTION
								Topsoil	
10								Fine to coarse sand with trace gravel	
20								Bottom of Boring	
26									
30									
40									
50									



Construction Key

☐	2" PVC Well Casing
☰	2" PVC Well Screen
🟩	Native Fill/Cuttings Backfull
⬛	Bentonite
🟨	Sand

Notes:
Well is 2-inches diameter PVC that is flush mounted with a road box. The 5 feet of screen is PVC 10-slot screen.

BETA GROUP, INC.

SOIL BORING/MONITORING WELL REPORT

PROJECT:	Pascoag	BORING/WELL NO.	MW-59S
LOCATION:	Summer Street, Pascoag, RI	PAGE 1 OF	1
DRILLING CO:	Technical Drilling Services, Inc.	DATE STARTED:	4/13/2012
EQUIPMENT:	Hollow-Stem Auger	DATE FINISHED:	4/13/2012
DRILLED BY:	Gary	SURFACE ELEVATION:	
INSPECTED BY:	AAF		*Elevation based on assumed datum.

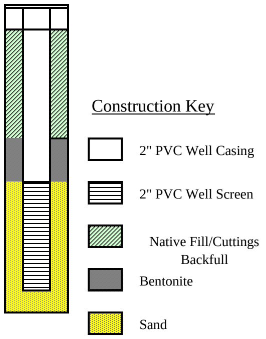
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches)				SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
			0-6	6-12	12-18	18-24		
								Topsoil
								Fine to coarse sand with trace gravel
10								
								Bottom of Boring
20								
26								
30								
40								
50								

MONITORING WELL CONSTRUCTION



Notes:
Well is 2-inches diameter PVC that is flush mounted with a road box. The 5 feet of screen is PVC 10-slot screen.

BETA GROUP, INC.	**SOIL BORING/MONITORING WELL REPORT**

PROJECT: Pascoag
LOCATION: Former Gas Station, North Main St., Pascoag RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow Stem Auger & Air Hammer
DRILLED BY: Gary
INSPECTED BY: AAF

BORING/WELL NO. MW-70BR
PAGE 1 OF 1
DATE STARTED: 4/16/2012
DATE FINISHED: 4/18/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

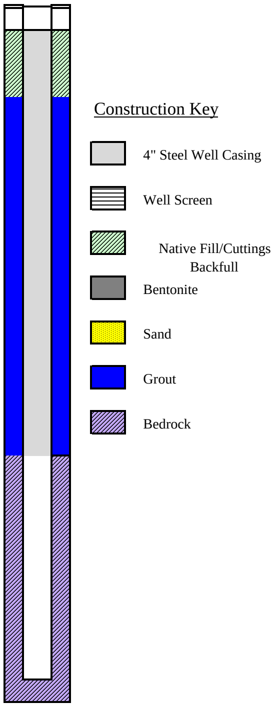
GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)
								Topsoil
								Silty sand with some trace gravel. Overburden
10								
20								Bedrock
30								Bottom of Boring
40								
50								

MONITORING WELL CONSTRUCTION



Notes: Well is 4-inches in diameter with a three foot stand-pipe. Casing made of steel.

BETA GROUP, INC.

SOIL BORING/MONITORING WELL REPORT

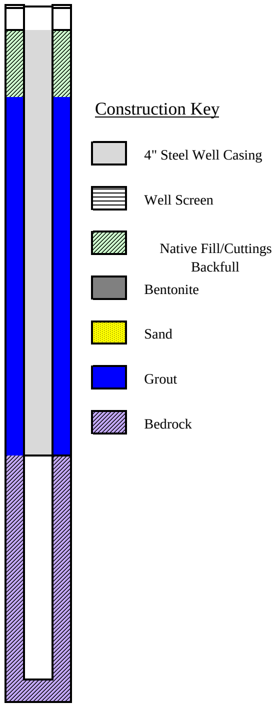
PROJECT: Pascoag
LOCATION: Former Gas Station, North Main St., Pascoag RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow Stem Auger & Air Hammer
DRILLED BY: Gary
INSPECTED BY: AAF

BORING/WELL NO. MW-71BR
PAGE 1 OF 1
DATE STARTED: 4/16/2012
DATE FINISHED: 4/18/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches)				SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)	MONITORING WELL CONSTRUCTION
			0-6	6-12	12-18	18-24			
								Topsoil	
								Silt with some sand. Overburden	
10									
20									
								Bedrock	
30									
								Bottom of Boring	
40									
50									

Notes: Well is 4-inches in diameter and flush mounted with a road box. Casing made of steel.

BETA GROUP, INC.

SOIL BORING/MONITORING WELL REPORT

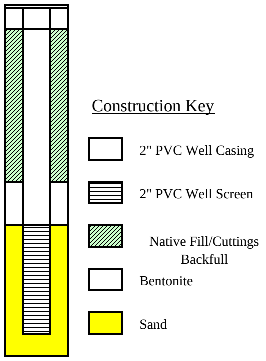
PROJECT: Pascoag
LOCATION: Former Gas Station, North Main St., Pascoag RI
DRILLING CO: Technical Drilling Services, Inc.
EQUIPMENT: Hollow-Stem Auger
DRILLED BY: Gary
INSPECTED BY: AAF

BORING/WELL NO. MW-71D
PAGE 1 OF 1
DATE STARTED: 4/17/2012
DATE FINISHED: 4/17/2012
SURFACE ELEVATION:
*Elevation based on assumed datum.

GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)	MONITORING WELL CONSTRUCTION
								Topsoil	
								Fine to coarse sand with trace gravel	
10									
								Bottom of Boring	
20									
26									
30									
40									
50									

Notes:
Well is 2-inches diameter PVC that is flush mounted with a road box. The 5 feet of screen is PVC 10-slot screen.

BETA GROUP, INC.	SOIL BORING/MONITORING WELL REPORT

PROJECT: Pascoag

LOCATION: Parking Lot, Summer St. Pascoag, RI

DRILLING CO: Technical Drilling Services, Inc.

EQUIPMENT: Hollow Stem Auger & Air Hammer

DRILLED BY: Gary

INSPECTED BY: AAF

BORING/WELL NO. MW-17BR

PAGE 1 OF 1

DATE STARTED: 4/17/2012

DATE FINISHED: 4/18/2012

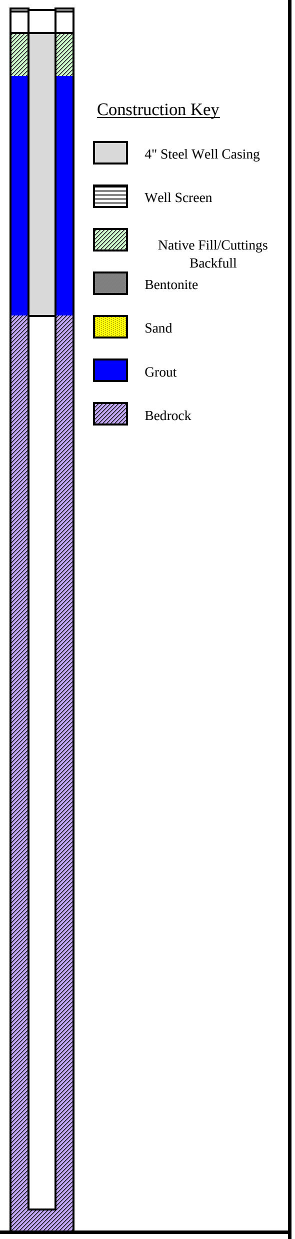
SURFACE ELEVATION:

*Elevation based on assumed datum.

GROUNDWATER OBSERVATIONS

DEPTH	STABILIZATION TIME

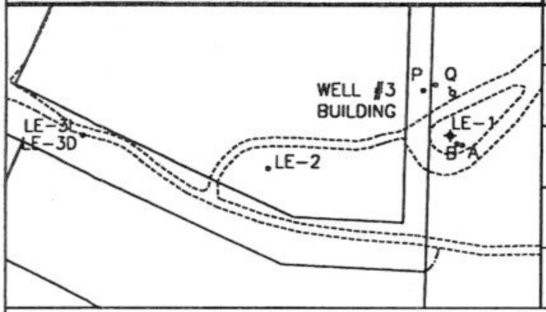
	AUGER CASING	SAMPLER	BARREL	WELL CASING
TYPE:				
SIZE ID:				
HAMMER WT:				
HAMMER FALL:				

DEPTH (feet)	SAMPLING DEPTH (from-to)	PEN/REC (in./in.)	HAMMER BLOWS ON SAMPLER (inches)				SOIL HEADSPACE (ppm)	LITHOLOGY (Description of materials)	MONITORING WELL CONSTRUCTION
			0-6	6-12	12-18	18-24			
								Topsoil	
								Silty sand with some trace gravel. Overburden	
10									
20									
30								Bedrock	
40									
50									
55									
								Bottom of Boring	

Notes: Well is 4-inches in diameter and is flush mounted with a road box. Casing made of steel.

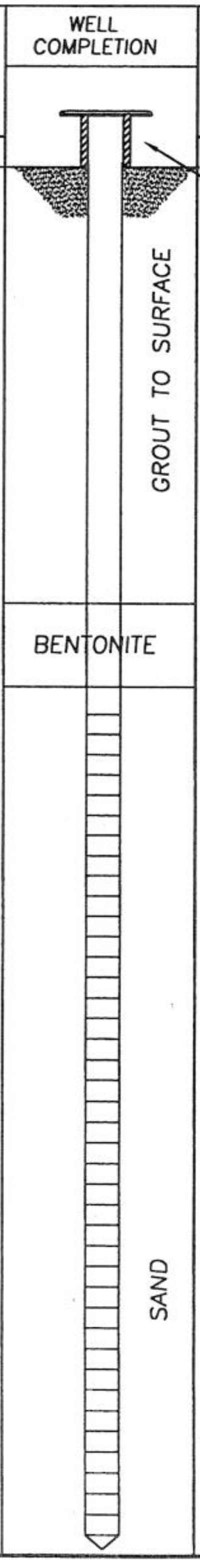
H.2. Existing Monitoring Well Construction Logs

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 2



DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-1
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM/FIELD LAB	DATE:	9/6/01
DEPTH TO WATER:	14.5'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER	2"	LENGTH	10'	WELL SEAL:	BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER	2"	LENGTH	15'	SAND PACK:	#0 SAND	TOTAL DEPTH:	25'

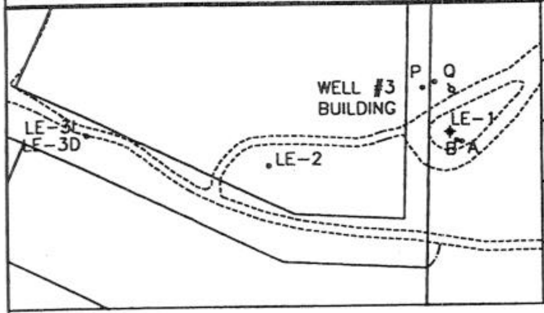


SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0 1 2 3 4 5 6 7 8 9 10 11 12 13			D	ND	STEEL WELL PROTECTION ABOVE GRADE 0–10': SAND, MEDIUM TO FINE, WELL SORTED, SUBANGULAR
S-1	14 15		3 3 3 4		ND	14'–16': SAND, MEDIUM, WELL, SORTED, SUBANGULAR
S-2	16 17		4 7 5 4		ND	16'–18': SAND, AS ABOVE
S-3	18 19		3 5 5 6		ND	18'–20': SAND, AS ABOVE
	20 21					
S-4	22 23		6 8 8 12		ND	22'–24': SAND, AS ABOVE
S-5	24 25		11 19		ND	24'–26': SAND, AS ABOVE

LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

PAGE 2 of 2

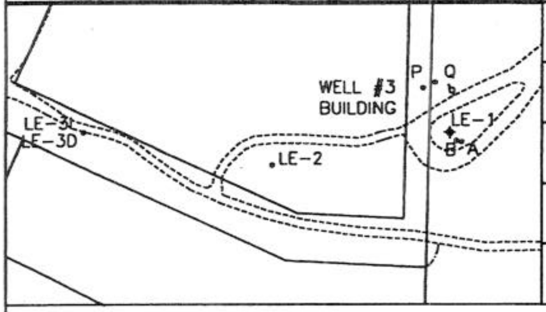


DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-1 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FILED
SCREENING INSTRUMENT:	OVM FIELD LAB	DATE:	9/6/01
DEPTH TO WATER:	14.5'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER	2"	LENGTH	10'	WELL SEAL: BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER	2"	LENGTH	15'	SAND PACK: #0 SAND	TOTAL DEPTH:	50'

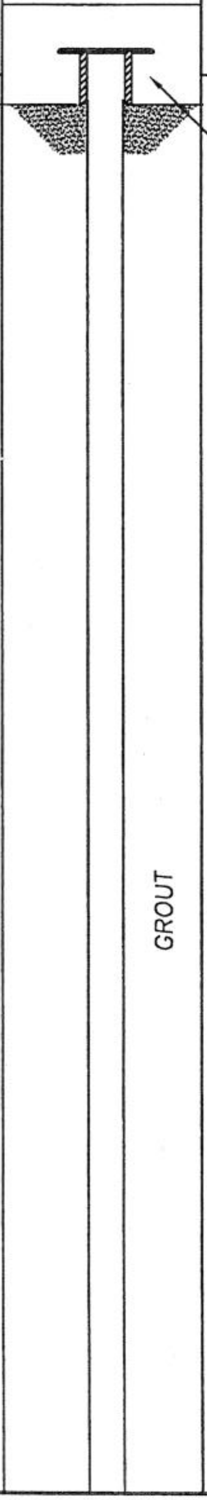
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
S-5	25		16 14			BENTONITE	
	26					GROUT	
	27						
S-6	28		15 18				28'-30': NO SAMPLE RECOVERY
	29		10 15				
S-7	30		6 10		ND		30'-32': SAND, FINE TO MEDIUM, WELL SORTED SUBANGULAR
	31		8 12				
S-8	32		7 8		ND		
	33		8 12				33'-35': SAND, AS ABOVE
S-9	34		8 7				
	35		8 12				35'-37': SAND, AS ABOVE, STRATIFIED
S-10	36		11 16				
	37		11 13				
S-11	38		20 14				38'-40': SAND – FINE TO MEDIUM, VERY WELL SORTED
	39		8 9				
S-12	40		12 9				40'-42': SAND, AS ABOVE
	41		8 11				
	42						
S-13	43		16 17				43'-45': SAND, AS ABOVE
	44		19 23				
S-14	45		19 54		ND		45'-47': FINE TO VERY FINE SAND, WELL SORTED LOWER 4" CONTAINS ANGULAR GRANITE FRAGMENTS, PEBBLES TO COBBLES
	46		22 26				
	47						REFUSAL AT 47.5' BELOW GRADE
	48						
	49						
	50						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 3



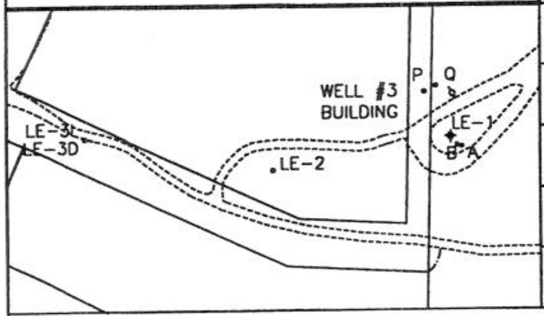
DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-2
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM/LAB	DATE:	9/6/01 & 9/10/01
DEPTH TO WATER:	14'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER 2"	LENGTH 61'	WELL SEAL:	BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER 2"	LENGTH 10'	SAND PACK:	#0 SAND	TOTAL DEPTH:	71'



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						
	1						STEEL WELL PROTECTION ABOVE GRADE
	2						
	3						
	4						
	5						
	6						
	7						
	8			D	ND		0–10': SAND, FINE TO MEDIUM, WELL SORTED, SUBANGULAR
	9						
	10						
	11						
	12						
	13						
	14		2	W	ND		14'–16': SAND, MEDIUM TO COARSE, POOR SORTING, SUBANGULAR
S–1	15	12"	3 3			GROUT	
	16		4				
	17						
	18						
	19	18"	4	W	ND		19'–21': SAND, FINE TO MEDIUM, WELL SORTED, SUBANGULAR
S–2	20		4 4				
	21		5				
	22						
	23						
	24						
	25						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 2 of 3

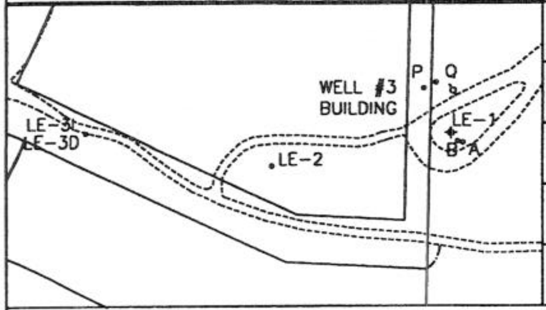


DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-2 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM FIELD LAB	DATE:	9/7/01
DEPTH TO WATER:	14'	LOGGED BY:	S.G.

RISER:	TYPE	PVC			DIAMETER	2"	LENGTH	61'	WELL SEAL: BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE	PVC	SLOT	.010	DIAMETER	2"	LENGTH	10'	SAND PACK: #0 SAND	TOTAL DEPTH:	71'

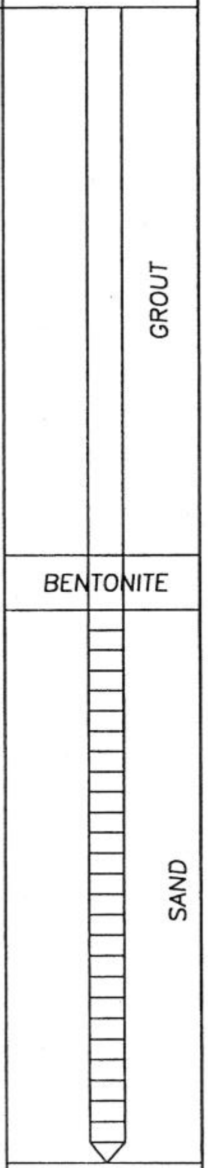
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
S-3	25	12"	16 19 22 20	W	ND	GROUT	25'-27': SAND, FINE TO VERY FINE, VERY WELL SORTED, HORIZONTAL STRATIFICATION
	26						
	27						
	28						
	29						
S-4	30	20"	3 2 3 3	W	ND		30'-32': SAND, AS ABOVE
	31						
	32						32': RUNNING SANDS – SET CASING
S-5	33	6"	11 7 7 9	W	ND		33'-35': SAND, FINE TO MEDIUM, VERY WELL SORTED, STRATIFIED
	34						
	35						
	36						
	37						
S-6	38	11"	8 9 9 11	W	ND		38'-40': SAND, AS ABOVE
	39						
	40						
	41						
	42						
S-7	43	8"	11 9 15 12	W	ND		43'-45': SAND, FINE TO MEDIUM, WELL SORTED, HORIZONTAL STRATIFICATION
	44						
	45						
	46						
	47						
S-8	48	12"	5 9 6 8	W	ND		48'-50': SAND, AS ABOVE
	49						
	50						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 3 of 3



DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-2 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELLFIELD
SCREENING INSTRUMENT:	OVM FIELD LAB	DATE:	9/7/01
DEPTH TO WATER:	14'	LOGGED BY:	S.G.

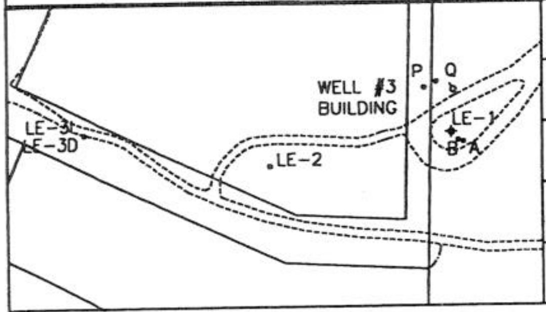
RISER:	TYPE	PVC			DIAMETER	2"	LENGTH	61'	WELL SEAL: BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE	PVC	SLOT	.010	DIAMETER	2"	LENGTH	10'	SAND PACK: #0 SAND	TOTAL DEPTH:	71'



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	50						
	51						
	52						
	53						
	54						
	55	0	120			GROUT	54': REFUSAL. SPOON SAMPLED, NO RECOVERY
	56						
	57						
	58						56': BIT PENETRATION RATE INCREASED, IN SOIL. PULLED AIR HAMMER. DROVE CASING TO 60'
	59						
	60	0	120			BENTONITE	60': SPLIT SPOON SAMPLE REFUSAL, NO RECOVERY IN SPOON. REINSERTED AIR HAMMER. CIRCULATED CUTTINGS OUT OF HOLE WERE GRANITE FRAGMENTS, WEATHERED, ANGULAR, AND MEDIUM SAND, SUBANGULAR. CONTINUED AIR HAMMERING TO 63'. STOPPED FOR DAY 9/10/01. CONTINUED WITH AIR HAMMER TO 71'.
	61						
	62						
	63						
	64						
	65						BEDROCK @ 60' TO 71': FRACTURED GRANODIORITE, COARSE GRAINED, CRYSTALLINE, ORANGE (IRON) STAINING
	66					SAND	
	67						
	68						
	69						
	70						
	71						
	72						
	73						
	74						
	75						

LINCOLN ENVIRONMENTAL, INC.

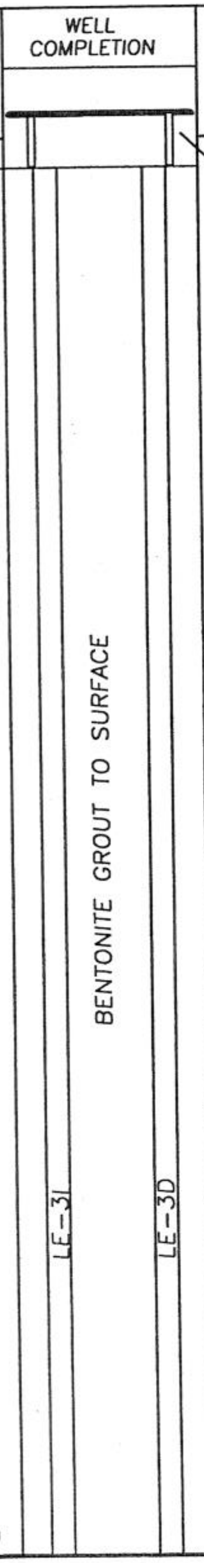
WELL LOG AND COMPLETION REPORT



DRILLED BY: TDS
PROJECT NUMBER: 01252
DRILLING METHOD: H.S. AUGER
WELL NUMBER: LE-3I AND LE-3D
SAMPLING METHOD: SPLIT SPOON
LOCATION: PASCOAG WELL FIELD
SCREENING INSTRUMENT: OVM
DATE: 9/10/01 AND 9/11/01
DEPTH TO WATER: 15'
LOGGED BY: S.G.

RISER: TYPE PVC DIAMETER 1" LENGTH LE-2I:46' LE-2D:58'
WELL SEAL: BENTONITE
HOLE DIA.: 8 1/4"

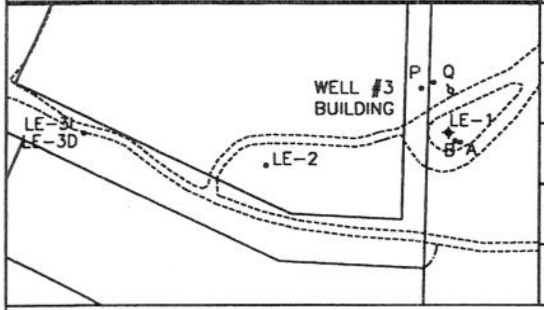
SCREEN: TYPE PVC SLOT .010 DIAMETER 1" LENGTH LE-2I:10' LE-2D:10'
SAND PACK: #0 SAND
TOTAL DEPTH: 68'



STEEL WELL PROTECTION ABOVE GRADE

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10	12"	6 8 6 5	D	ND	SAND, MEDIUM, WELL SORTED, SUBANGULAR
	11					
	12					
	13					
	14					
	15	6"	7 8 8 7	W	ND	SAND, MEDIUM TO COARSE, FAIR SORTING, SUBANGULAR, ORANGE (FE) STAINED
	16					
	17					
	18					
	19		2 2 2 3	W	ND	SAND, FINE, VERY WELL SORTED, STRATIFIED
	20					
	21					
	22					
	23					
	24		1 2	W	ND	SAND, AS ABOVE
	25					

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 2 of 3

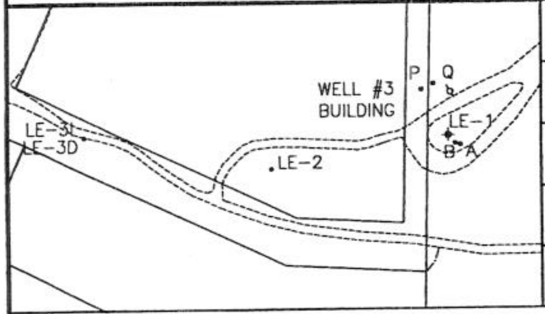


DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-3 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM	DATE:	9/10/01
DEPTH TO WATER:	15'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER 2"	LENGTH 61'	WELL SEAL: BENTONITE	HOLE DIA.: 8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER 2"	LENGTH 10'	SAND PACK: #0 SAND	TOTAL DEPTH: 68'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	25		2 1	W	ND		SAND, AS ABOVE
	26						
	27						
	28						
	29	4"	8 4 5 4	W	ND		28'-30': SAND, MEDIUM TO COARSE, WELL SORTED, SUBANGULAR
	30						
	31						
	32						
	33						
	34	6"	10 15 12 11	W	ND	BENTONITE GROUT TO SURFACE	SAND, FINE TO MEDIUM, WELL SORTED, STRATIFICATION
	35						
	36						
	37						
	38						
	39		4 4 10 17	W	ND		SAND, FINE TO COARSE, POOR SORTING, SUBANGULAR
	40					LE-3I LE-3D	
	41						
	42						
	43						
	44		8 8 5 6	W	ND	BENTONITE	SAND, FINE TO MEDIUM, WELL SORTED, SUBANGULAR
	45						
	46						
	47						
	48		120	W	ND	SAND	48'-: COARSE SANDS TO COBBLES, GRANITE CLASTS, WEATHERED, ANGULAR, REFUSAL. DROVE CASING TO 49'. PUT AIR HAMMER IN HOLE. HAMMERED THROUGH 2' ROCK, PULLED HAMMER, WENT IN HOLE WITH AUGER
	49						
	50						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 3 of 3

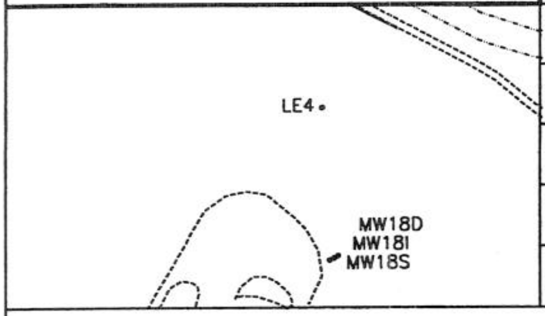


DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-3 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM FIELD LAB	DATE:	9/11/01
DEPTH TO WATER:	15'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER 1"	LENGTH	WELL SEAL:	BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER 1"	LENGTH	SAND PACK:	#0 SAND	TOTAL DEPTH:	68'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	50		8 19	W	ND		
	51		21 19				
	52						
	53						52'-54': NO RECOVERY IN SPOON DROVE CASING TO 58'
	54					SAND	
	55						
	56					LE-3I	
	57	3	120			BENTONITE	57': VERY COARSE SAND, SUBANGULAR WELL SORTED BEDROCK @ 57'-3" GRANODIORITE, COARSE GRAINED, CRYSTALLINE, FRACTURED, ORANGE (FE) STAINING.
	58						
	59						
	60						
	61						
	62						
	63						
	64					SAND	
	65						
	66						
	67						
	68					LE-3D	TD @ 68'
	69						
	70						
	71						
	72						
	73						
	74						
	75						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 3



DRILLED BY:	TDS	PROJECT NUMBER:	02152
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-4
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM	DATE:	9/12/01
DEPTH TO WATER:	26'	LOGGED BY:	S.G.

RISER:	TYPE	PVC			DIAMETER	2"	LENGTH	63'	WELL SEAL: BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE	PVC	SLOT	.010	DIAMETER	2"	LENGTH	10'	SAND PACK: #0 SAND	TOTAL DEPTH:	73'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0					CONCRETE	
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10		3 5				SAND, FINE TO MEDIUM, WELL SORTED
S-1	11	8"	4 4	D	ND		
	12		5 5	D	ND		SAND, AS ABOVE
S-2	13	10"	4 4			GROUT	
	14						
	15		4 4	D	ND		SAND, FINE TO MEDIUM, TRACE GRANULES, FAIR TO WELL SORTED, STRATIFICATION
S-3	16	12"	4 4				
	17		4 5	D	ND		
S-4	18	12"	3 3				
	19		3				
	20	10"	9 6	D	ND	BENTOITE	SAND, AS ABOVE
S-5	21		6 5				
	22	12"	8 7	D	ND		SAND, AS ABOVE
S-6	23		6 6				
	24						
	25						SAND, AS ABOVE

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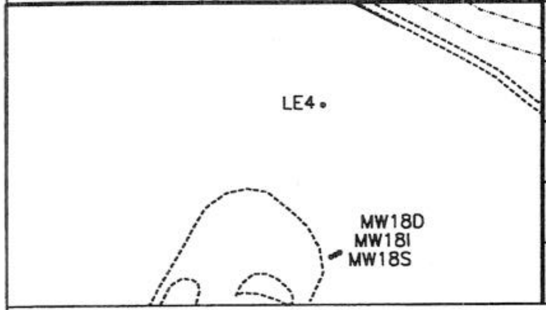
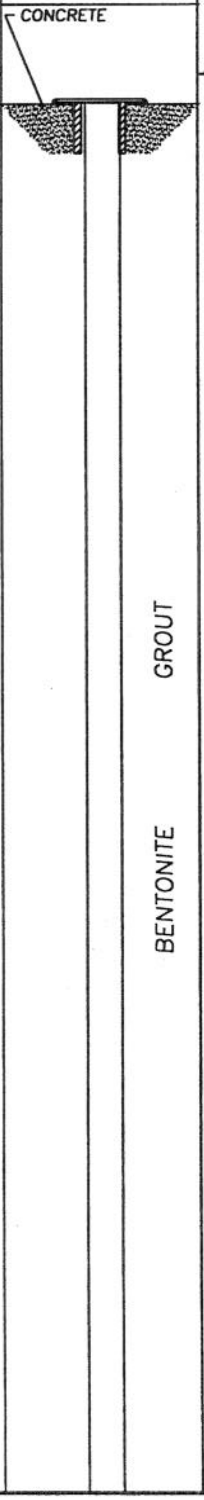


DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-4 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM	DATE:	9/12/01
DEPTH TO WATER:	26'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER 2"	LENGTH 63'	WELL SEAL:	BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER 2"	LENGTH 10'	SAND PACK:	#0 SAND	TOTAL DEPTH:	73'

WELL COMPLETION



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
S-7	25 26	8"	5 7 6 7	W	ND	SAND, AS ABOVE
S-8	27 28		8 10 6 6	W	ND	
	29					
S-9	30 31	18"	9 8 7 7	W	ND	SAND, AS ABOVE RUNNING SANDS
	32 33 34					
S-10	35 36	12"	5 4 5 5	W	ND	SAND, MEDIUM, VERY WELL SORTED, SUBANGULAR
S-11	37 38	15"	6 5 5 6	W	ND	SAND, AS ABOVE
	39 40 41 42					
S-12	43 44	18"	5 5 5 7	W	ND	SAND, MEDIUM TO COARSE, WELL SORTED, STRATIFIED, SUBANGULAR
S-13	45 46	24"	7 8 7 7	W	ND	SAND, FINE TO MEDIUM, WELL SORTED, SUBANGULAR
	47 48 49 50					

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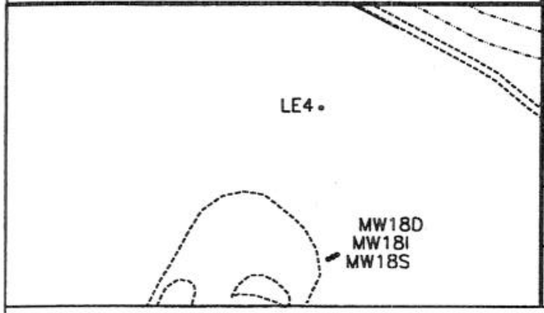
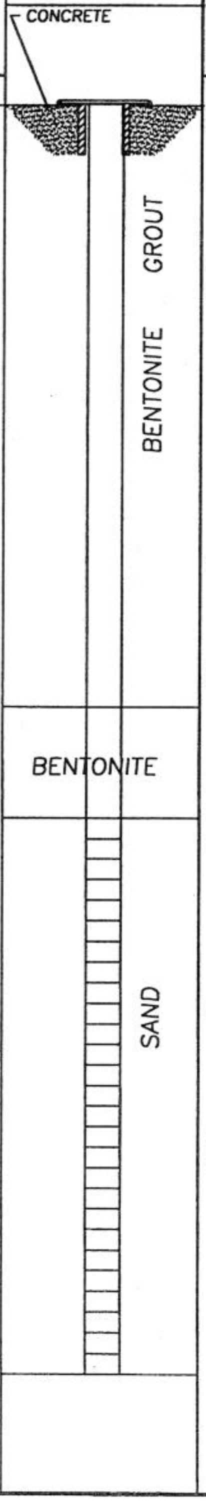


DRILLED BY:	TDS	PROJECT NUMBER:	01252
DRILLING METHOD:	HOLLOW STEM AUGER	WELL NUMBER:	LE-4 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	PASCOAG WELL FIELD
SCREENING INSTRUMENT:	OVM FIELD LAB	DATE:	9/11/01
DEPTH TO WATER:	26'	LOGGED BY:	S.G.

RISER:	TYPE PVC		DIAMETER 2"	LENGTH	WELL SEAL: BENTONITE	HOLE DIA.:	8 1/4"
SCREEN:	TYPE PVC	SLOT .010	DIAMETER 2"	LENGTH	SAND PACK: #0 SAND	TOTAL DEPTH:	73'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	50		7 7	W	ND	SAND, AS ABOVE
S-14	51		7 6			
	52		4 4			
S-15	53	2"	4 4	W	ND	SAND, FINE TO MEDIUM, WELL SORTED, SUBANGULAR
	54					
	55					
	56					
	57					
	58		18 14	W	ND	SAND, AS ABOVE
S-16	59		16 14			
	60		16 14	W	ND	SAND, AS ABOVE
S-17	61		16 100			
	62					BEDROCK @ 62'
	63					GRANITE GNEISS, CRYSTALLINE, COARSE GRAIN, ORANGE (FE) STAINING
	64					
	65					
	66					
	67					DRILLED ROCK BY AIR ROTARY TO 73'
	68					
	69					COMPLETED WELL IN BEDROCK, SCREENED FROM 73' TO 63'
	70					
	71					
	72					
	73					
	74					
	75					

WELL COMPLETION



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Drilled By: Technical Drilling Services	Project Number: R1275
Drilling Method: Geoprobe	Boring ID: SB-2
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM	Date: November 7, 2001
Depth to Water: 10 feet	Logged By: B. Correira
RISER TYPE: NONE Diameter: Length:	Well Seal: NA Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:	Sand Pack: NA Total Depth: 10.5-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	258	0.5'-4' Dark brown, fine to medium sand, fine to coarse sub-angular gravel, some silt, asphalt, dry
	3					
	4					
	5					
S 2	6			Dry-Moist	413	4'-8' Tan brown, fine to medium sand, fine sub angular gravel, some silt, dry moist
	7					
	8					
S-3	9			Moist		8'-10' SAA
	10			Saturated	1027	10'-10.5' Red-brown, fine sub-angular gravel, moist
	11					
	12					
	13					Refusal @ 10.5-feet
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services
Project Number: R1275
Drilling Method: Geoprobe
Boring ID: SB-3
Sampling Method: Acetate Sleeve
Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM
Date: November 7, 2001
Depth to Water: 10 feet
Logged By: B. Correira
RISER TYPE: NONE Diameter: Length:
Well Seal: NA
Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:
Sand Pack: NA
Total Depth: 13-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	262	0.5'-4' Brown, fine to medium sand, fine sub-angular gravel, some silt, asphalt, dry
	3					
	4					
	5					
S-2	6			Dry-Moist	435	4'-8' SAA
	7					
	8					
S-3	9			Saturated	879	8'-11.5' Brown-tan, fine to medium sand, fine sub-angular gravel, saturated
	10					
S-4	11			Saturated	1027	11.5'-12.75' Brown, fine sub-angular gravel, saturated with petroleum 12.75'-13' weathered biotite-rich gneiss
	12					
	13					Refusal @ 13-feet
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services			Project Number: R1275	
Drilling Method: Geoprobe			Boring ID: SB-4	
Sampling Method: Acetate Sleeve			Location: North Main Street, Burrillville (Pascoag), RI	
Screening Instrument: OVM			Date: November 7, 2001	
Depth to Water: NA			Logged By: B. Correira	
RISER TYPE: NONE	Diameter:	Length:	Well Seal: NA	Hole Dia: 1.25-inch
SCREEN TYPE: NONE	Diameter:	Length:	Sand Pack: NA	Total Depth: 10-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	16	0.5'-4' Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry-Moist	11	4'-8' SAA
	7					
	8					
S-3	9			Moist	11	8'-10' Tan, fine to medium sand, fine sub-angular gravel, asphalt saturated
	10					
	11					Refusal @ 10-feet
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services	Project Number: R1275
Drilling Method: Geoprobe	Boring ID: SB-5
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM	Date: November 7, 2001
Depth to Water: NA	Logged By: B. Correira
RISER TYPE: NONE Diameter: Length:	Well Seal: NA Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:	Sand Pack: NA Total Depth: 11-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	LITHOLOGY / REMARKS
	0					Asphalt
	1					
S-1	2			Dry	11	0.5'-4' Brown to tan, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry-Moist	5	4'-8' Brown, fine to medium sand, fine to coarse sub-angular gravel, some silt, asphalt, dry
	7					
	8					
S-3	9			Moist	2	8'-11' SAA
	10					
	11					Refusal @ 11-feet
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services
Project Number: R1275
Drilling Method: Geoprobe
Boring ID: SB-6
Sampling Method: Acetate Sleeve
Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM
Date: November 7, 2001
Depth to Water: 10.5-feet
Logged By: B. Correira
RISER TYPE: NONE Diameter: Length:
Well Seal: NA
Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:
Sand Pack: NA
Total Depth: 11.5-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	31	0.5'-4' Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry Moist	35	4'-8' SAA
	7					
	8					
	9					8'-10.5' Tan, fine to medium sand, fine sub-angular gravel, some silt, moist
S-3	10			Moist Saturated	1035	10.5'-11' Brown, fine sub-angular gravel, saturated
	11					11'-11.5'
S-4	12			Saturated	155	Weathered biotite-rich gneiss
	13					Refusal @ 11.5-feet
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services	Project Number: R1275	
Drilling Method: Geoprobe	Boring ID: SB-7	
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI	
Screening Instrument: OVM	Date: November 7, 2001	
Depth to Water: 11.5-feet	Logged By: B. Correira	
RISER TYPE: NONE Diameter: Length:	Well Seal: NA	Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:	Sand Pack: NA	Total Depth: 12-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	31	0.5'-4' Tan-brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry-Moist	94	4'-8' SAA
	7					
	8					
	9					
S-3	10			Moist		8'-11.5' SAA
	11			Saturated	754	11.5'-12' Brown, fine to coarse sub-angular gravel, saturated (over weathered rock)
	12					
	13					Refusal @ 12-feet
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services	Project Number: R1275
Drilling Method: Geoprobe	Boring ID: SB-8
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM	Date: November 7, 2001
Depth to Water: NA	Logged By: B. Correira

RISER TYPE: NONE	Diameter:	Length:	Well Seal: NA	Hole Dia: 1.25-inch
SCREEN TYPE: NONE	Diameter:	Length:	Sand Pack: NA	Total Depth: 3-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
	2					Refusal @ 2-3 feet, 4-attempts
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

LINCOLN ENVIRONMENTAL, INC. WELL LOG AND COMPLETION REPORT

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Drilled By: Technical Drilling Services
Drilling Method: Geoprobe
Sampling Method: Acetate Sleeve
Screening Instrument: OVM
Depth to Water: NA
RISER TYPE: NONE Diameter: Length:
SCREEN TYPE: NONE Diameter: Length:

Project Number: R1275
Boring ID: SB-9
Location: North Main Street, Burrillville (Pascoag), RI
Date: November 7, 2001
Logged By: B. Correira
Well Seal: NA
Hole Dia: 1.25-inch
Sand Pack: NA
Total Depth: 12-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	1	0.5'-4' Brown, fine to medium sand, fine to coarse sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry	32	4'-8' SAA
	7					
	8					
S-3	9			Moist	67	8'-12' SAA
	10					
	11					
	12					Refusal @ 12-feet
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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LINCOLN ENVIRONMENTAL, INC. WELL LOG AND COMPLETION REPORT		PAGE 1 of 1
Drilled By: Technical Drilling Services	Project Number: R1275	
Drilling Method: Geoprobe	Boring ID: SB-10	
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI	
Screening Instrument: OVM	Date: November 7, 2001	
Depth to Water: NA	Logged By: B. Correira	
RISER TYPE: NONE Diameter: Length:	Well Seal: NA	Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:	Sand Pack: NA	Total Depth: 11.5-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	3	0.5'-4' Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry-Moist	43	4'-8' SAA with some asphalt
	7					
	8					
S-3	9			Moist	104	8'-11.5' SAA
	10					
	11					
	12					Refusal @ 11.5-feet
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services
Project Number: R1275
Drilling Method: Geoprobe
Boring ID: SB-11
Sampling Method: Acetate Sleeve
Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM
Date: November 7, 2001
Depth to Water: NA
Logged By: B. Correira
RISER TYPE: NONE Diameter: Length:
Well Seal: NA
Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:
Sand Pack: NA
Total Depth: 9-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
	1					
S-1	2			Dry	0	0.5'-4' Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry	13	4'-8' SAA
	7					
	8					
S-3	9			Dry-Moist	164	8'-9' SAA
	10					
	11					
	12					Refusal @ 9-feet
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services	Project Number: H1275
Drilling Method: Geoprobe	Boring ID: SB-12
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM	Date: November 7, 2001
Depth to Water: NA	Logged By: B. Correira

RISER TYPE: NONE	Diameter:	Length:	Well Seal: NA	Hole Dia: 1.25-inch
SCREEN TYPE: NONE	Diameter:	Length:	Sand Pack: NA	Total Depth: 8-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	LITHOLOGY / REMARKS
	0					Asphalt
	1					
S-1	2			Dry	35	0.5'-4' Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	3					
	4					
	5					
S-2	6			Dry	NR	4'-8' Brown, fine to medium sand, fine to coarse sub-angular gravel, some silt, dry
	7					
	8					
	9					Refusal @ 8-feet
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services
Project Number: R1275
Drilling Method: Geoprobe
Boring ID: SB-13
Sampling Method: Acetate Sleeve
Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM
Date: November 7, 2001
Depth to Water: NA
Logged By: B. Correira
RISER TYPE: NONE Diameter: Length:
Well Seal: NA
Hole Dia: 1.25-inch
SCREEN TYPE: NONE Diameter: Length:
Sand Pack: NA
Total Depth: 8-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt
S-1	1			Dry	234	0.5'-2' Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	2					
S-2	3			Dry	485	2'-4' SAA
S-3	4			Moist	767	4'-6' SAA
	5					
S-4	6			Moist	1063	6'-8' Brown-tan, fine to medium sand, fine sub-angular gravel, some silt, moist (weathered rock at tip)
	7					
	8					
	9					Refusal @ 8-feet
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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Drilled By: Technical Drilling Services	Project Number: R1275
Drilling Method: Geoprobe	Boring ID: LE-5/SB-14
Sampling Method: Acetate Sleeve	Location: North Main Street, Burrillville (Pascoag), RI
Screening Instrument: OVM	Date: November 7, 2001
Depth to Water: 10-feet	Logged By: B. Correira

RISER TYPE: PVC	Diameter: 1-inch	Length: 1.9-feet	Well Seal: NA	Hole Dia: 1.25-inch
SCREEN TYPE: PVC	Diameter: 1-inch	Length: 10-feet	Sand Pack: NA	Total Depth: 11.9-feet

Sample No.	Depth (feet)	Sample Recovery	Blow Count per 6"	Moisture Content	Screening Results (ppm)	*LITHOLOGY / REMARKS*
	0					Asphalt 0.5'-2'
S-1	1			Dry	34	Brown, fine to medium sand, fine sub-angular gravel, some silt, dry
	2					2'-4'
S-2	3			Dry	63	SAA
S-3	4			Moist	119	4'-6' SAA
	5					
S-4	6			Moist	742	6'-8' SAA with some asphalt
	7					
S-5	8			Moist	850	8'-10' SAA
	9			Saturated		
S-6	10			Saturated	1039	10'-11.75' Brown, fine to coarse gravel, saturated
	11					11.75'-12' Weathered biotite-rich gneiss/schist
	12					
	13					Refusal @ 12-feet Monitor well installed @ 11.9 feet
	14					
	15					
	16					
	17					
	18					
	19					
	20					

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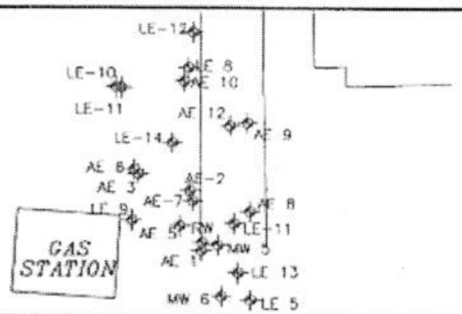
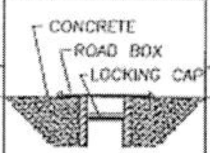


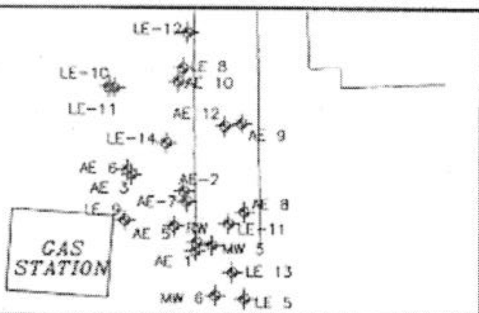
DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	SB-15
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	NA	LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:		HOLE DIA.:	8"
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:		TOTAL DEPTH:	9'2"



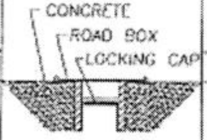
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						
	1						
	2						
	3						FILL: MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, TRACE OF ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN - GRAY
	4						
SS-1	5	2	8 8 4 3	D	ND	NO WELL INSTALLED	
	6						
	7						
	8						
SS-2	9	2	120/2"	D	2600+		AUGER REFUSAL @ 9'2"
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1



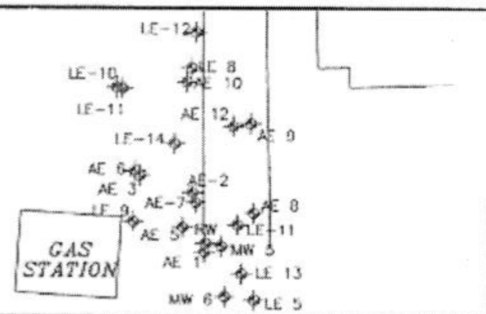
DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	SB-16
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	NA	LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER		LENGTH		WELL SEAL:	HOLE DIA.:	8"
SCREEN:	TYPE	SLOT	DIAMETER		LENGTH		SAND PACK:	TOTAL DEPTH:	



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						
	1						
	2						
	3						FILL: MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT. FINE SAND, TRACE OF ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN - GRAY
	4		6				
SS-1	5	18	8 12		765		
	6		18				
	7						AUGER REFUSAL @ 7.5'
	8					NO WELL INSTALLED	
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

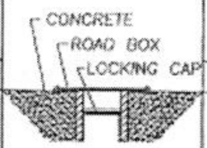
LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1



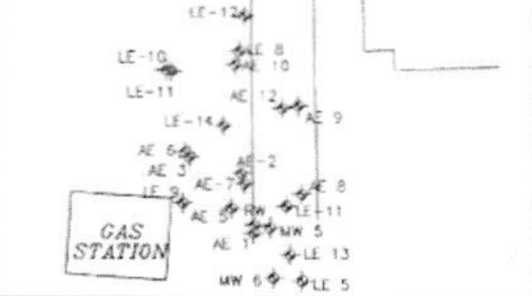
DRILLED BY:	ENVIRONMENTAL DRILLING	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	SB-17
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM	DATE:	11/9/01
DEPTH TO WATER:	NOT REACHED	LOGGED BY:	S.G.

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:	HOLE DIA.:	8"
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:	TOTAL DEPTH:	7'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						
	1						
	2						
	3						
	4						
	5	10	4 4	D	ND		SAND, FINE TO COARSE, POOR SORTING, SUBANGULAR
	6		3 3				
	7	2	120				ROCK FRAGMENTS, GRANITE GNEISS REFUSAL @ 7'
	8						
	9						
	10						
	11						
	12						NO WELL INSTALLED
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

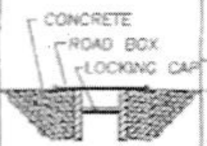


LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1



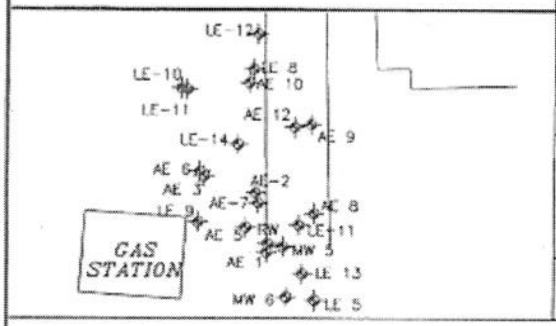
DRILLED BY: ENVIRONMENTAL DRILLING
PROJECT NUMBER: R1275
DRILLING METHOD: H.S. AUGER
WELL NUMBER: SB-18
SAMPLING METHOD: SPLIT SPOON
LOCATION: 24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT: OVM
DATE: 11/9/01
DEPTH TO WATER: NOT REACHED
LOGGED BY: S.G.

RISER: TYPE DIAMETER LENGTH
WELL SEAL:
HOLE DIA.: 8"
SCREEN: TYPE SLOT DIAMETER LENGTH
SAND PACK:
TOTAL DEPTH: 7.5'



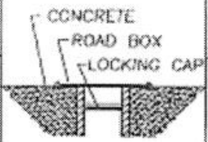
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						
	1						
	2						0-5': CUTTINGS FROM AUGER, SAND, FINE TO COARSE, SOME GRANULES TO COBBLES
	3						
	4						
	5	8	10	D	93		5'-7': SAND, AS ABOVE
	6		21 45 49				
	7	3	120	D	147		7'-7.5': SAND, AS ABOVE ROCK FRAGMENTS IN BOTTOM OF SPOON, GRANITE GNEISS. WENT BACK IN WITH AUGER. REFUSAL @ 7.5'
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						NO WELL INSTALLED
	16						
	17						
	18						
	19						
	20						

LINCOLN ENVIRONMENTAL, INC. | WELL LOG AND COMPLETION REPORT | PAGE 1 of 1

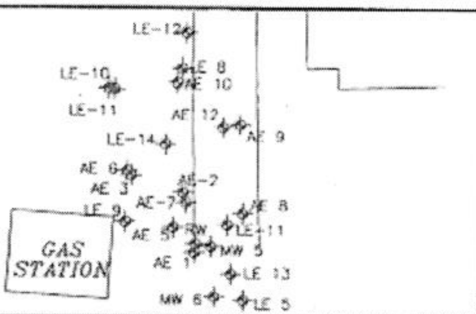


DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	SB-19
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	NA	LOGGED BY:	A. DURFEE

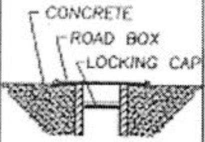
RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:		HOLE DIA.:	
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:		TOTAL DEPTH:	4.5'



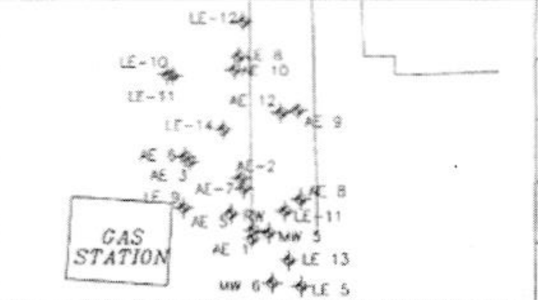
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						ASPHALT
	1						0-4.5': FILL MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN - GRAY
	2						
	3						
	4						
SS-1			20/6"		ND	NO WELL INSTALLED	AUGER REFUSAL @ 4.5'
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT		PAGE 1 of 1
	DRILLED BY: TDS	PROJECT NUMBER: R1275	
	DRILLING METHOD: H.S. AUGER	WELL NUMBER: SB-20	
	SAMPLING METHOD: SPLIT SPOON	LOCATION: 24 NORTH MAIN STREET PASCOAG, RI	
	SCREENING INSTRUMENT: OVM 580B	DATE: 11/9/01	
	DEPTH TO WATER: NA	LOGGED BY: A. DURFEE	

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:	HOLE DIA.:
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:	TOTAL DEPTH: 4.5'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						ASPHALT
	1						0–5.5' FILL MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, TRACE OF ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN – GRAY
	2						
	3						
SS-1	4	12	18	D	ND		
	5		22 120/4"			NO WELL INSTALLED	AUGER REFUSAL @ 5.5'
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

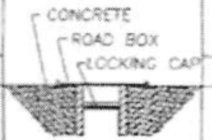
LINCOLN ENVIRONMENTAL, INC. | **WELL LOG AND COMPLETION REPORT** | PAGE 1 of 1



DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	SB-21
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	NA	LOGGED BY:	A. DURFEE

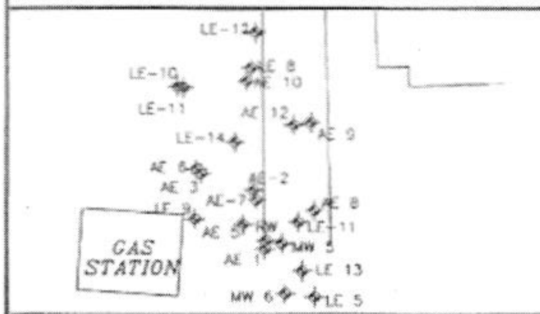
RISER: TYPE DIAMETER LENGTH WELL SEAL: HOLE DIA.:

SCREEN: TYPE SLOT DIAMETER LENGTH SAND PACK: TOTAL DEPTH:



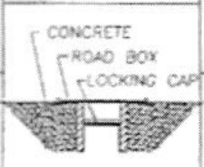
SAMPLE NO	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						ASPHALT
							0-6': FILL MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, TRACE OF ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN - GRAY
	1						
	2						
	3						
	4						
SS-1			6 10 22 24	D	ND	NO WELL INSTALLED	
	5						
	6						
	7						AUGER REFUSAL @ 7.5'
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 2



DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	SB-22
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	99 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/14/01
DEPTH TO WATER:	NA	LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:	HOLE DIA.:
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:	TOTAL DEPTH:



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						TOP SOIL
							0-14' (SEE LOG FOR MW-15)
	1						
	2						
	3						
	4						
	5					NO WELL INSTALLED	
	6						
	7						AUGER REFUSAL @ 7.5'
	8						
	9						
	10						
	11						
	12						
	13						
SS-1	14	16	5 4 4 4	W			14'-16': VERY COARSE SAND / FINE COARSE SAND GRAVEL SOME MEDIUM TO COARSE SAND, TRACE SILT, FINE SAND, TAN - LIGHT BROWN
	15						
	16						
	17						
	18						
SS-2	19	16	4 7	W			19'-21': SAME AS ABOVE WITH LENS OF FINE TO MEDIUM SAND AT 19.5'-20'
	20						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 2 of 2

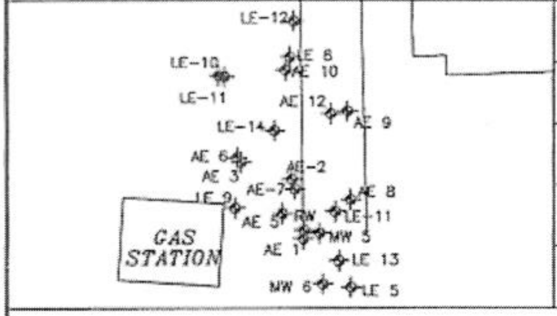
DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	SB-22
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	99 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/14/01
DEPTH TO WATER:	~13.5'	LOGGED BY:	A. DURFEE

RISER: TYPE DIAMETER LENGTH WELL SEAL: HOLE DIA.:

SCREEN: TYPE SLOT DIAMETER LENGTH SAND PACK: TOTAL DEPTH:

SAMPLE NO	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
SS-2	20	16	8 16	W			
	21						
	22						
	23	10	2 3 5 7				23'-25': MEDIUM TO VERY COARSE SAND, SOME FINE TO MEDIUM GRAVEL, TRACE SILT/FINE SAND, TRACE PEBBLES TAN-BROWN
	24						
	25						
	26						
	27						
	28		120/2"				
	29						AUGER REFUSAL @ 28'2"
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

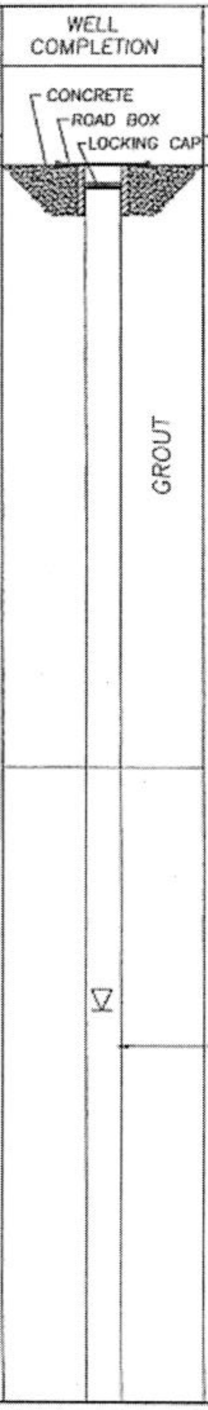
LINCOLN ENVIRONMENTAL, INC. | WELL LOG AND COMPLETION REPORT | PAGE 1 of 1



DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-6
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/8/01 & 11/12/01
DEPTH TO WATER:	14'	LOGGED BY:	A. DURFEE

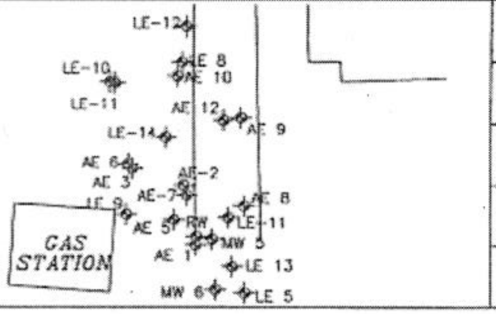
RISER: TYPE STEEL DIAMETER 4" LENGTH 10' | WELL SEAL: CEMENT/BENTONITE GROUT | HOLE DIA.: 3 7/8"

SCREEN: NONE TYPE SLOT DIAMETER LENGTH | SAND PACK: NONE | TOTAL DEPTH: 49'



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0					FINE TO VERY FINE SAND, TAN-LIGHT BROWN
	1					
	2					
	3					
SS-1	4	5	100	D	22	4.5' AUGER REFUSAL - BEDROCK
	5					
	6					
	7					
	8					
	9					SET 4" DIA. CASING INTO BEDROCK
	10					BOTTOM OF 4" CASING @ 10.0'
	11					ADVANCED BORING INTO BEDROCK BY AIR HAMMER
	12					10'-15': ADVANCED 5 FT. IN 12 MINUTES
	13					
	14					OPEN BOREHOLE 3 7/8" DIAMETER
	15					15'-20': ADVANCED 5 FT. IN 12 MINUTES FRACTURE AT 18.5 FEET
	16					
	17					
	18					
	19					
	20					

LINCOLN ENVIRONMENTAL, INC. | WELL LOG AND COMPLETION REPORT | PAGE 2 of 3

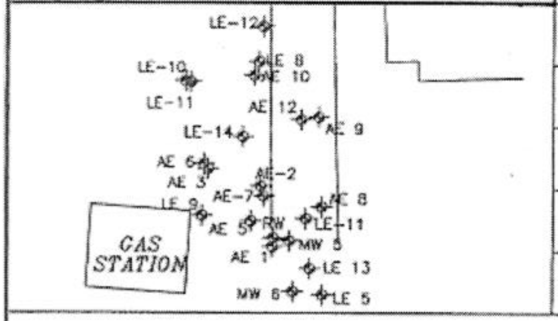


DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-6 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/8/01 & 11/12/01
DEPTH TO WATER:	14'	LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL: BENTONITE	HOLE DIA.: 3 7/8"
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK: NONE	TOTAL DEPTH: 49'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	20						
	21						
	22						20'-25': ADVANCED BORING BY AIR HAMMER 5 FT. IN 8 MINUTES
	23						
	24						
	25						
	26						
	27						25'-30': ADVANCED 5 FT. IN 5 MINUTES
	28						
	29						
	30						
	31						
	32						
	33						30'-35': ADVANCED 5 FT. IN 15 MINUTES SEPARATE PHASE PETROLEUM OBSERVED IN CUTTINGS/WATER EXCAVATED FROM WELL.
	34						
	35						
	36						
	37						
	38						
	39						
	40						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 3 of 3

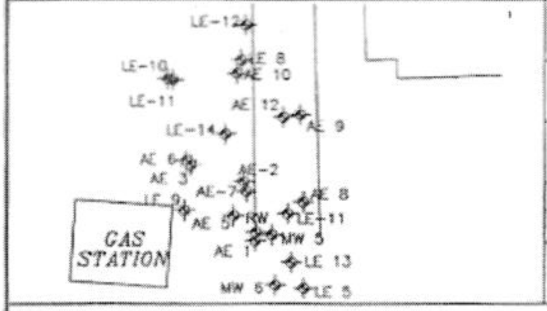


DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-6 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/8/01 & 11/12/01
DEPTH TO WATER:	14'	LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:	BENTONITE/ CONCRETE	HOLE DIA.:	3 7/8"
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:	NONE	TOTAL DEPTH:	49'

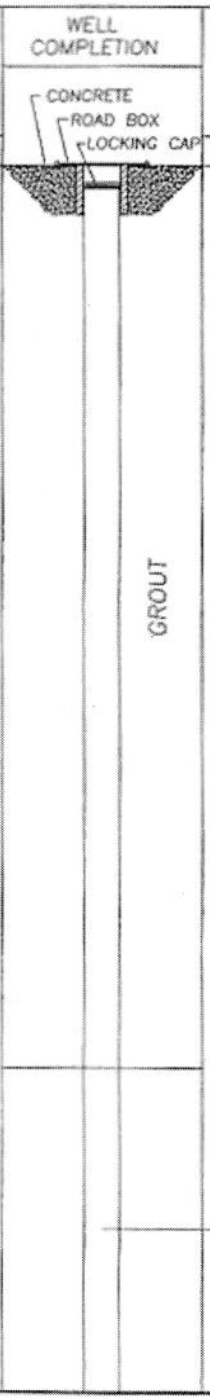
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	40						
	41						
	42						
	43						
	44						
	45						
	46						
	47						
	48						
	49						AIR HAMMER TO 49' (OPEN HOLE)
	50						APPROXIMATELY 200 GALLONS OF WATER WERE REMOVED FROM WELL DURING DEVELOPMENT. (WATER PLACED IN DRUMS)
	51						
	52						
	53						
	54						
	55						
	56						
	57						
	58						
	59						
	60						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 5



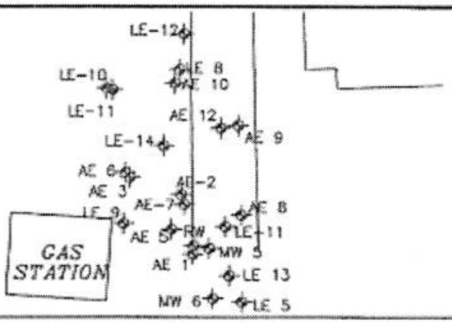
DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-7
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01 & 11/13/01
DEPTH TO WATER:	21'	LOGGED BY:	A. DURFEE/R. KOWALSKI

RISER:	TYPE STEEL	DIAMETER 4"	LENGTH 15'	WELL SEAL: BENTONITE/ CEMENT GROUT	HOLE DIA.: 3 7/8"
SCREEN: NONE	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK: NONE	TOTAL DEPTH: 102'



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0					
	1					
	2					
	3					4–4.5': FINE VERY FINE SAND, TAN–LIGHT BROWN
	4	20	8 9 13		8	4.5'–6': VERY FINE SAND, MASSIVE, LIGHT TAN
	5					
	6					
	7					
	8					
	9		14			9'–10': SAA
SS-2	10	10	4 20 30		7	10'–11': SAA WITH TRACE OF ROCK FRAGMENTS
	11					
	12					
	13					13': AUGER REFUSAL– BEDROCK
	14					
	15					BOTTOM OF 4" CASING @ 15.0'
	16					
	17					ADVANCED BORING INTO BEDROCK BY AIR HAMMER
	18					OPEN BOREHOLE 3 7/8" DIAMETER
	19					
	20					

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 2 of 5

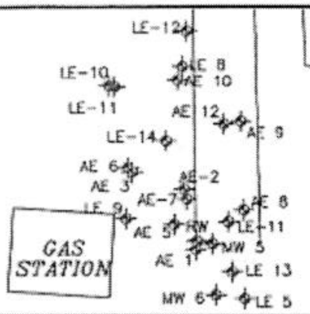


DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-7 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01 & 11/13/01
DEPTH TO WATER:	21'	LOGGED BY:	A. DURFEE

RISER:	TYPE	DIAMETER	LENGTH	WELL SEAL: BENTONITE	HOLE DIA.: 3 7/8"
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK: NONE	TOTAL DEPTH: 102'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	20						
	21						
	22						
	23						
	24						
	25						
	26						
	27						
	28						25'-30': GOT LITTLE WATER FROM 1ST 1/2FT. THEN DRY TO 30FT. ~1/2FT/MIN.
	29						
	30						
	31						
	32						
	33						30'-35': (15 MIN.) NO DROPS SOME WATER THEN DRY ROCK LOOKS GREYER
	34						
	35						
	36						
	37						
	38						35'-40': LITTLE MORE WATER THAN BEFORE AT 35.5'-36' - GOT VAPORS - 6 PPM 38'-39' 20 PPM
	39						39'-40' 20 PPM
	40						15 MINS FOR 5 FT. - NO DROPS

LINCOLN ENVIRONMENTAL, INC. | WELL LOG AND COMPLETION REPORT | PAGE 3 of 5



DRILLED BY: TDS

DRILLING METHOD: H.S. AUGER / AIR HAMMER

SAMPLING METHOD: SPLIT SPOON

SCREENING INSTRUMENT: OVM 580B

DEPTH TO WATER: 21'

PROJECT NUMBER: R1275

WELL NUMBER: LE-7 (CONT.)

LOCATION: NORTH MAIN STREET PASCOAG, RI

DATE: 11/9/01 & 11/13/01

LOGGED BY: A. DURFEE

RISER: TYPE DIAMETER LENGTH

WELL SEAL: BENTONITE/ CONCRETE

HOLE DIA.: 3 7/8"

SCREEN: TYPE SLOT DIAMETER LENGTH

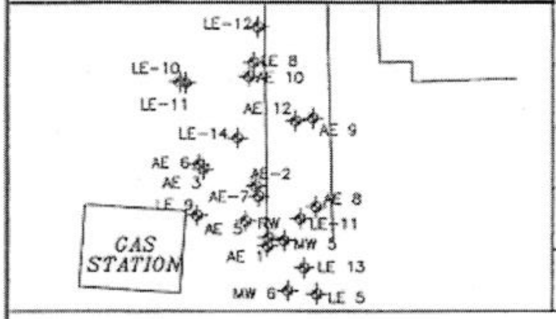
SAND PACK: NONE

TOTAL DEPTH: 102'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	40						40'–41': 16 PPM – GOT VERY DRY – DUSTY AT 45' – 6 PPM DRY ~13 MINS FOR 5 FT. PENETRATION
	41						
	42						
	43						
	44						
	45						45'–50': NO WATER BLEW UP AT START
	46						46'–47' – 9 PPM
	47						
	48						48.5' – 3 PPM 12 MINS FOR 5 FT. STILL DRY– LET WET SIT ~1.25 HRS AFTER DRILLING TO 50'
	49						
	50						
	51						
	52						50'–55': LITTLE WATER; THEN DRY ~13 MINS FOR 5 FT.
	53						
	54						
	55						
	56						
	57						
	58						55'–60': VERY DRY 12 MINS FOR 5 FT.
	59						
	60						

LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT



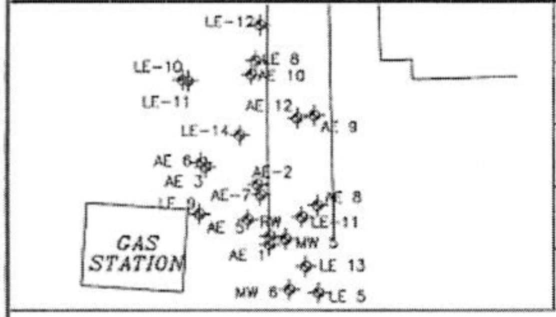
DRILLED BY: TDS
PROJECT NUMBER: R1275
DRILLING METHOD: H.S. AUGER / AIR HAMMER
WELL NUMBER: LE-7 (CONT.)
SAMPLING METHOD: SPLIT SPOON
LOCATION: NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT: OVM 580B
DATE: 11/9/01 & 11/13/01
DEPTH TO WATER: 21'
LOGGED BY: A. DURFEE

RISER: TYPE DIAMETER LENGTH
WELL SEAL: BENTONITE/ CONCRETE
HOLE DIA.: 3 7/8"

SCREEN: TYPE SLOT DIAMETER LENGTH
SAND PACK: NONE
TOTAL DEPTH: 102'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	60						
	61						
	62						60'-65': 14 MINS FOR 5 FT. STILL DRY
	63						
	64						
	65						
	66						
	67						65'-70': 13 MINS 5 FT. DRY
	68						
	69						
	70						
	71						73' - LITTLE MOISTURE
	72						70'-75': 18 MINS FOR 5 FT. 1 PPM PID
	73						
	74						
	75						
	76						
	77						
	78						75'-80': 0 PPM PID 17 MINS FOR 5 FT. LITTLE WATER AT 80'
	79						
	80						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 5 of 5



DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-7 (CONT.)
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01 & 11/13/01
DEPTH TO WATER:	21'	LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:	BENTONITE/ CONCRETE	HOLE DIA.: 3 7/8"
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:	NONE	TOTAL DEPTH: 102'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	80						
	81						
	82						80'-85' ~ 17 MINS 5 FT.
	83						
	84						
	85						
	86						
	87						
	88						85'-90': MOIST CUTTINGS ~17 MINS/5 FT.
	89						
	90						
	91						
	92						
	93						90'-95': MOIST CUTTINGS ~16 MINS/5 FT.
	94						
	95						
	96						
	97						
	98						95'-100': MOIST THEN DRY & HARD; WHITE CUTTINGS ~35 MINS FOR 5 FT.
	99						
	100						BOTTOM OF BORING @ 100'

LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

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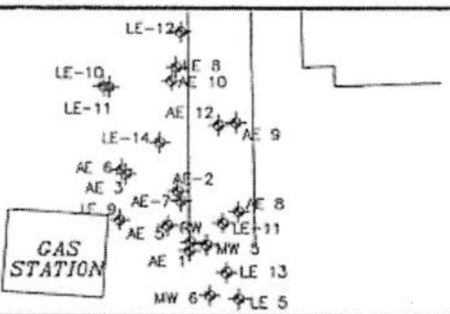
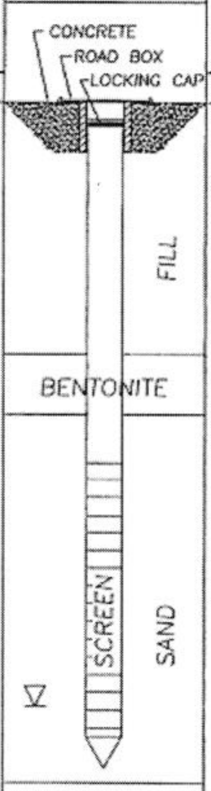


DRILLED BY:	ENVIRONMENTAL DRILLING	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-8
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM	DATE:	11/9/01
DEPTH TO WATER:	10'	LOGGED BY:	S.G.

RISER:	TYPE	PVC			DIAMETER	2"	LENGTH	6'	WELL SEAL:	BENTONITE	HOLE DIA.: 8"
SCREEN:	TYPE	PVC	SLOT	.010	DIAMETER	2"	LENGTH	5'	SAND PACK:	#1 SAND	TOTAL DEPTH: 11'-3"

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)
	0				
	1				
	2				
	3				
	4				
	5	6	8 7	D	195
	6		9 3		
	7		10 25		
	8	4	28 90	D	263
	9				
	10	6	58 58	W	285
	11		120		
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				

WELL COMPLETION



LITHOLOGY / REMARKS

5'-7': SAND, FINE TO MEDIUM, TRACE GRANULES/ PEBBLES SUBANGULAR

7'-9': SAND, AS ABOVE, WITH TRACE ANGULAR ROCK FRAGMENTS

10'-11': SAND, FINE TO MEDIUM, SUBANGULAR, FAIR SORTING, PEBBLE SIZE ANGULAR ROCK FRAGMENTS (GRANITE GNEISS)

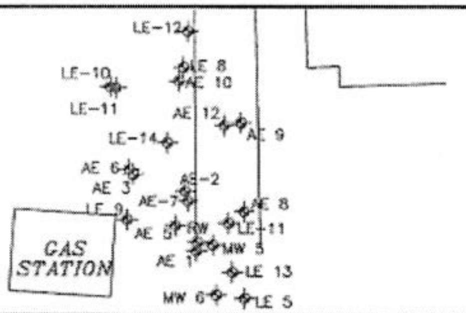
SAND, AS ABOVE

REFUSAL @ 11'-3"

LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

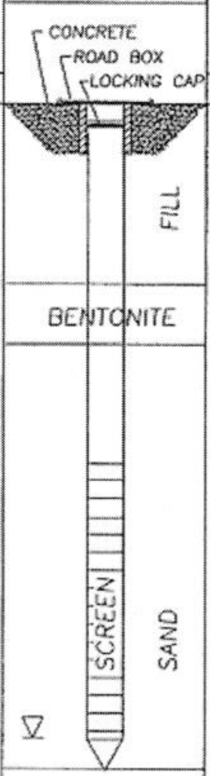
PAGE 1 of 1



DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-9
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	10.5'	LOGGED BY:	A. DURFEE

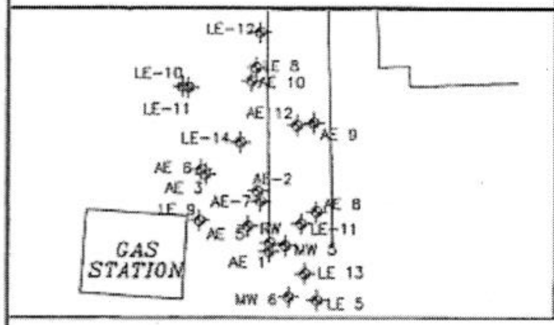
RISER:	PVC	TYPE SCH. 40		DIAMETER	2"	LENGTH	6'	WELL SEAL:	BENTONITE	HOLE DIA.:	8"
SCREEN:	PVC	TYPE SCH. 40	SLOT 0.020	DIAMETER	2"	LENGTH	5'	SAND PACK:	SILCA SAND	TOTAL DEPTH:	11.0'

WELL COMPLETION



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0					
	1					
	2					
	3					0-6': FILL: MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, OCC'L ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN - GRAY
	4		7			
SS-1	5	16	7 7	D	ND	
	6		10			
	7					
	8					
	9		6	D		
SS-2	10	20	22 44	M	1575	9'-11': SAME AS ABOVE
	11		28			AUGER REFUSAL @ 11' BGL
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1

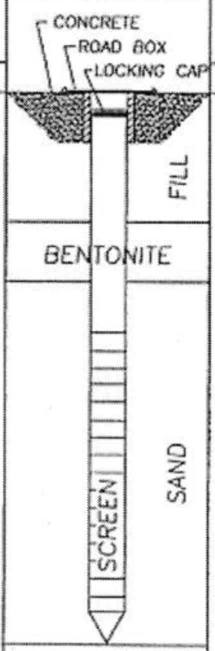


DRILLED BY:	ENVIRONMENTAL DRILLING	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-10
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM	DATE:	11/9/01
DEPTH TO WATER:	NOT REACHED	LOGGED BY:	S.G.

RISER:	TYPE	PVC		DIAMETER	2"	LENGTH	4'	WELL SEAL:	BENTONITE	HOLE DIA.:	8"
SCREEN:	TYPE	PVC	SLOT .010	DIAMETER	2"	LENGTH	5'	SAND PACK:	#1 SAND	TOTAL DEPTH:	9'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)
	0				
	1				
	2				
	3				
	4				
	5	15	5 10 3 5	D	6.1
	6				
	7	6	40 120	D	17
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				

WELL COMPLETION



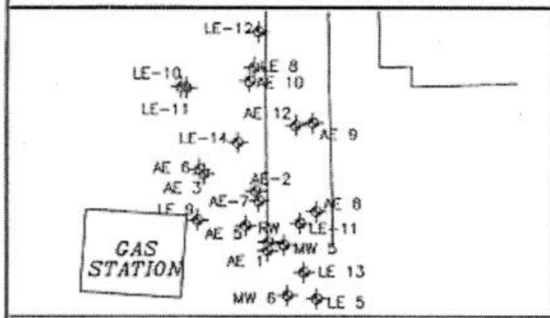
LITHOLOGY / REMARKS

0–5': CUTTINGS: SAND, FINE TO COARSE/ GRANULES TO COBBLES

5'–7': SAND, FINE TO COARSE, SOME GRANULES TO COBBLES, SUBANGULAR

7'–7.5': SAND, AS ABOVE
2" OF ANUGLAR ROCK FRAGMENTS AT BOTTOM OF SPOON (GRANITE GNEISS)
AUGERED TO 9'
REFUSAL @ 9'

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1

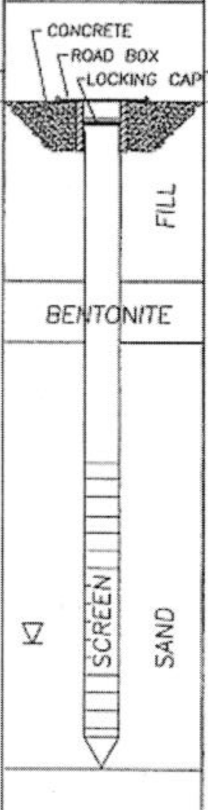


DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-11
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	9'	LOGGED BY:	A. DURFEE

RISER:	PVC	TYPE SCH. 40	DIAMETER	2"	LENGTH	6'	WELL SEAL:	BENTONITE	HOLE DIA.:	8"
SCREEN:	PVC	TYPE SCH. 40 SLOT 0.020	DIAMETER	2"	LENGTH	5'	SAND PACK:	SILCA SAND	TOTAL DEPTH:	11.0'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)
	5	16	5 4 9 16	D	3600+
SS-2	10	22	9 9 12 65	W	877

WELL COMPLETION



LITHOLOGY / REMARKS

ASPHALT

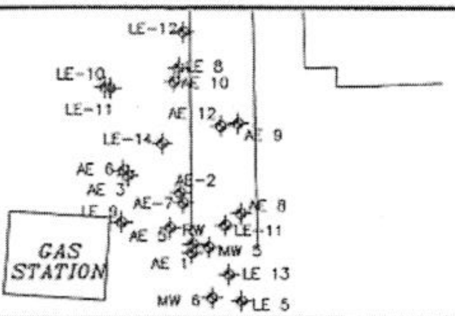
0-6': FILL MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, TRACE ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN - GRAY

9'-11': SAME AS ABOVE
AUGER REFUSAL @ 11'

LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

PAGE 1 of 1

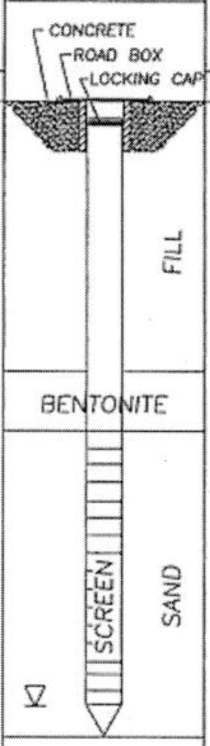


DRILLED BY:	ENVIRONMENTAL DRILLING	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-12
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM	DATE:	11/9/01
DEPTH TO WATER:	10'	LOGGED BY:	S.G.

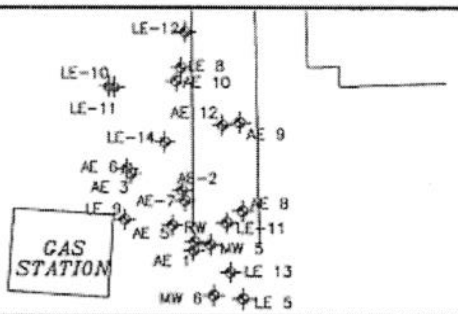
RISER:	TYPE	PVC		DIAMETER	2"	LENGTH	5.5'	WELL SEAL:	BENTONITE	HOLE DIA.:	8"
SCREEN:	TYPE	PVC	SLOT .010	DIAMETER	2"	LENGTH	5'	SAND PACK:	#1 SAND	TOTAL DEPTH:	10.5'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0					
	1					
	2					0–5': CUTTINGS FROM AUGER: SAND, FINE TO COARSE, SOME GRANULES TO COBBLES. SUBANGULAR, POOR SORTING
	3					
	4					
	5	8	12 11	D	85	
	6		20 35			5'–7': SAND, AS ABOVE
	7	10	38 50	D	139	
	8		49 55			7'–9': SAND, AS ABOVE
	9					
	10	3	5	W	862	10–'10.5': SAND, FINE TO COARSE, TRACE GRANULES, SUBANGULAR. AUGER REFUSAL @ 10.5' (BOUNCING SPOON)
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

WELL COMPLETION



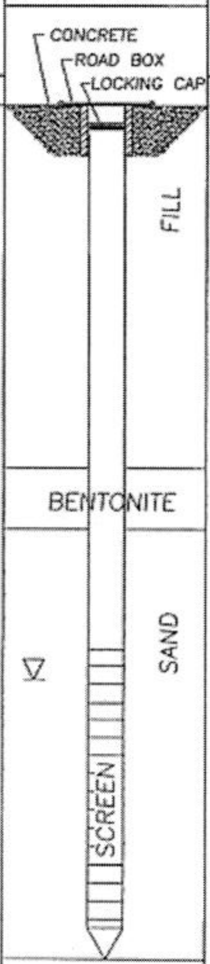
LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1



DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-13
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/9/01
DEPTH TO WATER:	9'	LOGGED BY:	A. DURFEE

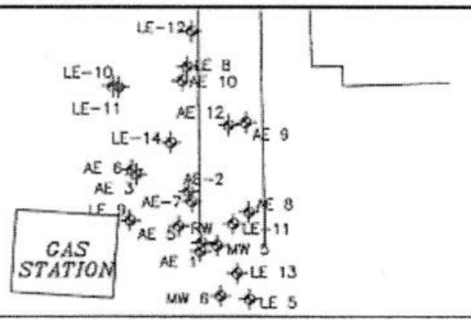
RISER: PVC TYPE SCH. 40 DIAMETER 2" LENGTH 9' WELL SEAL: BENTONITE HOLE DIA.:

SCREEN: PVC TYPE SCH. 40 SLOT 0.020 DIAMETER 2" LENGTH 5' SAND PACK: SILCA SAND TOTAL DEPTH: 14'



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						ASPHALT
	1						
	2						
	3						0–6': FILL MEDIUM TO COARSE SAND, SOME VERY COARSE SAND, FINE GRAVEL, TRACE SILT FINE SAND, OCC'L ASPHALT/ROCK FRAGMENTS, LOOSE, BROWN – GRAY
	4						
	5	12	5 3 5 5	D	315		
	6						
	7						
	8						
	9						
	10	14	18 22 27 34	M W	832		
	11						
	12						
	13						
	14						9'–11': SAME AS ABOVE AUGER REFUSAL @ 14'
	15						
	16						
	17						
	18						
	19						
	20						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 1

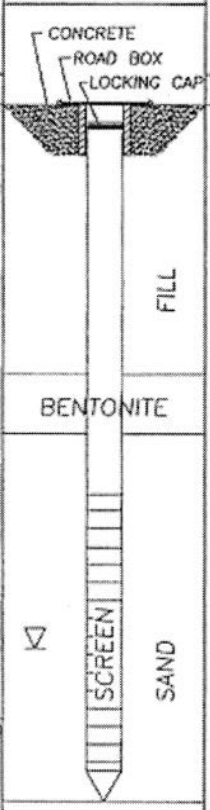


DRILLED BY:	ENVIRONMENTAL DRILLING	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER	WELL NUMBER:	LE-14
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	24 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM	DATE:	11/9/01
DEPTH TO WATER:	9'	LOGGED BY:	S.G.

RISER:	TYPE	PVC		DIAMETER	2"	LENGTH	6.5'	WELL SEAL:	BENTONITE	HOLE DIA.:	8"
SCREEN:	TYPE	PVC	SLOT .010	DIAMETER	2"	LENGTH	5'	SAND PACK:	#1 SAND	TOTAL DEPTH:	11.5'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)
	0				
	1				
	2				
	3				
	4				
	5	12	3 4 5 6	D	452
	6				
	7	4	10 13 122	D	247
	8				
	9				
	10	3	16 39 120	W	>1,125
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				

WELL COMPLETION



LITHOLOGY / REMARKS

0–5': CUTTINGS FROM AUGER:
SAND, FINE TO VERY COARSE, SOME PEBBLES TO COBBLES. VERY POOR SORTING, SUBANGULAR

5'–7': SAND, FINE TO COARSE, TRACE GRANULES, SUBROUNDED

7'–8.5': SAND, AS ABOVE

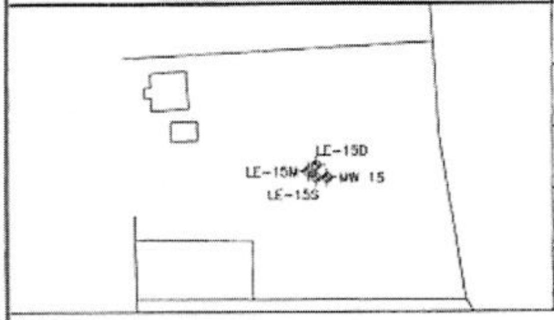
10–'11': SAND, FINE TO COARSE, TRACE GRANULES, TO PEBBLES

REFUSAL @ 11.5'

LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

PAGE 1 of 2



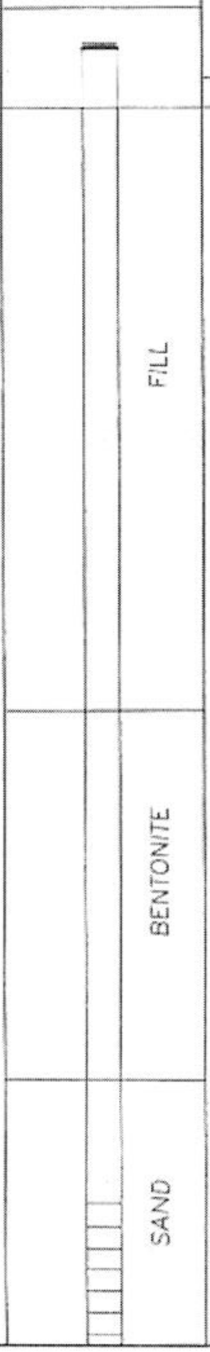
DRILLED BY: TDS
DRILLING METHOD: H.S. AUGER / AIR HAMMER
SAMPLING METHOD: SPLIT SPOON
SCREENING INSTRUMENT: OVM 580B
DEPTH TO WATER: 21'

PROJECT NUMBER: R1275
WELL NUMBER: LE-15S
LOCATION: 99 NORTH MAIN STREET PASCOAG, RI
DATE: 11/16/01
LOGGED BY: A. DURFEE/R.K.

RISER: PVC TYPE SCH.40 DIAMETER 2" LENGTH 18'
WELL SEAL: BENTONITE/ CEMENT
HOLE DIA.: 8"

SCREEN: PVC TYPE SCH.40 SLOT 0.020 DIAMETER 2" LENGTH 5'
SAND PACK: SILICA SAND
TOTAL DEPTH: 23'

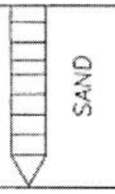
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						TOPSOIL
	1						
	2						
	3						
	4					FILL	NO SAMPLES
	5						(SEE LOG FOR SB-22)
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13					BENTONITE	
	14						
	15						
	16						
	17						
	18					SAND	
	19						
	20						



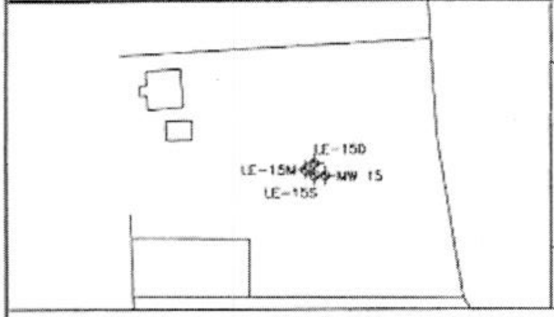
LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT		PAGE 2 of 2

DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-15S
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	99 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/16/01
DEPTH TO WATER:	~13.5'	LOGGED BY:	A. DURFEE

RISER:	PVC	TYPE SCH.40		DIAMETER	2"	LENGTH	18'	WELL SEAL:	BENTONITE/ CEMENT	HOLE DIA.:	3 7/8"
SCREEN:	PVC	TYPE SCH.40	SLOT 0.020	DIAMETER	2"	LENGTH	5'	SAND PACK:	SILICA SAND	TOTAL DEPTH:	23'

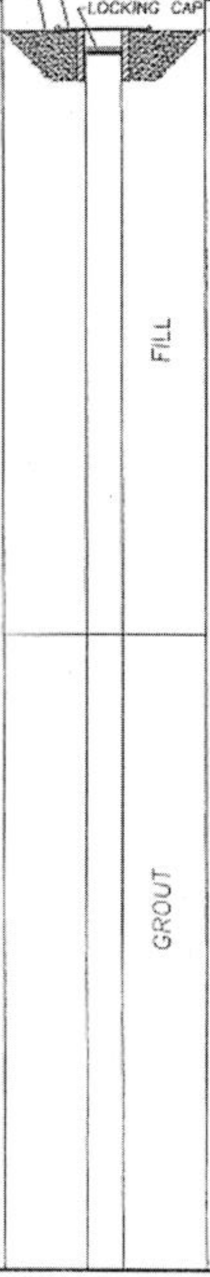
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	20					 SAND	
	21						NO SAMPLES
	22						
	23						AUGER REFUSAL @ 23'
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 2



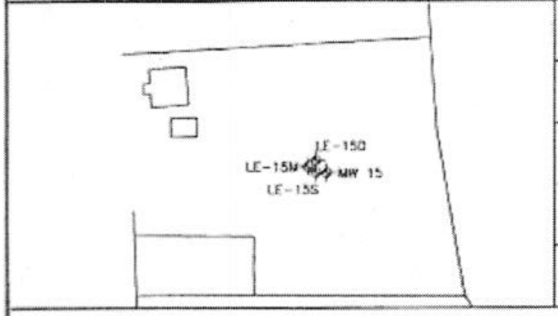
DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	H.S. AUGER / AIR HAMMER	WELL NUMBER:	LE-15M
SAMPLING METHOD:	SPLIT SPOON	LOCATION:	99 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:	OVM 580B	DATE:	11/16/01
DEPTH TO WATER:	13.5'	LOGGED BY:	A. DURFEE/R.K.

RISER:	PVC	TYPE	SCH.40			DIAMETER	2"	LENGTH	29.5'	WELL SEAL:	BENTONITE/ CEMENT GROUT	HOLE DIA.:	3 7/8"
SCREEN:	PVC	TYPE	SCH.40	SLOT	0.020	DIAMETER	2"	LENGTH	5'	SAND PACK:	SILICA SAND	TOTAL DEPTH:	34.5'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						
	1						AUGERED TO 18' THEN DROVE 4" STEEL CASING
	2						
	3						
	4						NO SAMPLES (SEE LOG FOR SB-22)
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

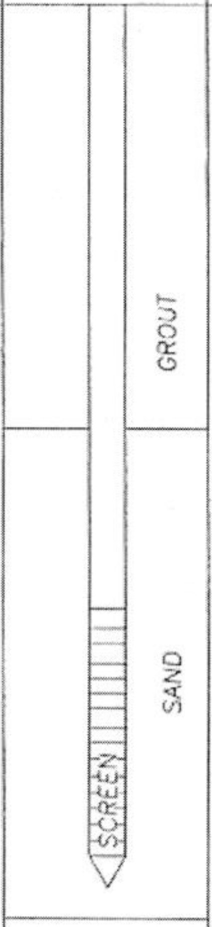
LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

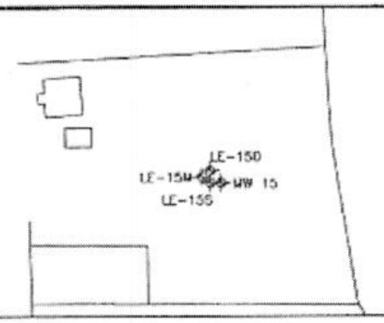


DRILLED BY: TDS
PROJECT NUMBER: R1275
DRILLING METHOD: H.S. AUGER / AIR HAMMER
WELL NUMBER: LE-15M
SAMPLING METHOD: SPLIT SPOON
LOCATION: 99 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT: OVM 580B
DATE: 11/16/01
DEPTH TO WATER: ~13.5'
LOGGED BY: A. DURFEE

RISER: PVC TYPE SCH.40 DIAMETER 2" LENGTH 29.5' WELL SEAL: BENTONITE/ CEMENT GROUT HOLE DIA.: 3 7/8"
SCREEN: PVC TYPE SCH.40 SLOT 0.020 DIAMETER 2" LENGTH 5' SAND PACK: SILICA SAND TOTAL DEPTH: 34.5'

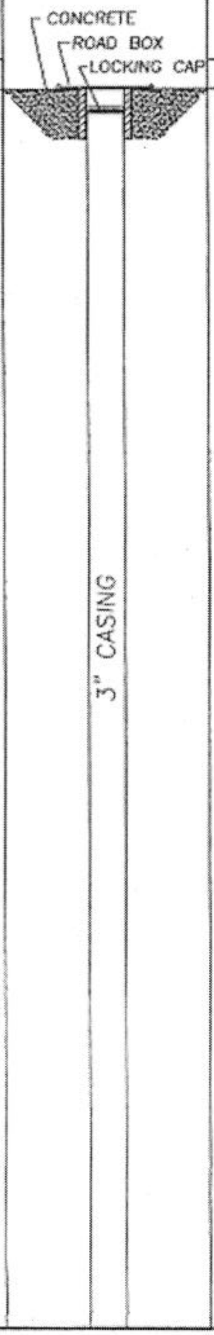
SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	20						
	21						NO SAMPLES
	22						
	23						4" CASING REFUSAL @ 23'
	24						ADVANCED WITH ROLLER BIT TO 24' AND THEN WITH AIR HAMMER TO 26'
	25						
	26						26'-29': SIGNIFICANT FRACTURES
	27						
	28						
	29						
	30						29'-31': COMPETENT ROCK
	31				92*		
	32						
	33						31'-34': SIGNIFICANT FRACTURES
	34				110*		
	35						BOTTOM OF BORING @ 35'
	36						
	37						
	38						
	39						* OVM RESULTS ON DEVELOPMENT WATER
	40						

LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 1 of 3

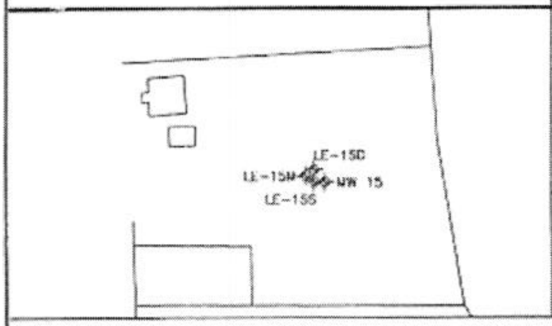


DRILLED BY: TDS		PROJECT NUMBER: R1275	
DRILLING METHOD: CASING/AIR HAMMER/ CORE		WELL NUMBER: LE-15D	
SAMPLING METHOD: CORE		LOCATION: REAR 99 N. MAIN ST. PASCOAG, RI	
SCREENING INSTRUMENT:		DATE: 11/15/01 & 11/19/01	
DEPTH TO WATER:		LOGGED BY: A. DURFEE	
RISER: TYPE STEEL	DIAMETER 3" LENGTH 38'	WELL SEAL:	HOLE DIA.:
SCREEN: NONE TYPE SLOT	DIAMETER LENGTH	SAND PACK:	TOTAL DEPTH: 60'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	0						TOP SOIL
	1						
	2						0-23' - NO SAMPLES - SEE LOG FOR SB-22
	3						4" CASING REFUSAL @ 23' DROVE 3" CASING TO 38' AND SEALED WITH BENTONITE/CEMENT GROUT
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						



LINCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 2 of 3



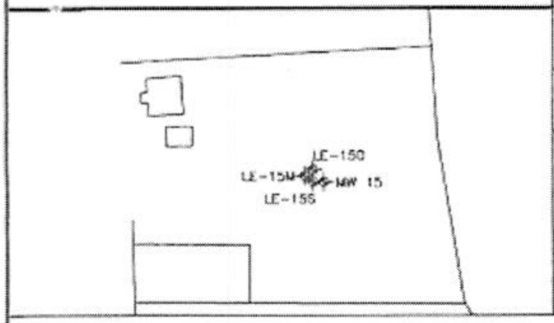
DRILLED BY: TDS	PROJECT NUMBER: R1275
DRILLING METHOD: CASING/AIR HAMMER/ CORE	WELL NUMBER: LE-15D (CONT.)
SAMPLING METHOD:	LOCATION: REAR 99 N. MAIN ST. PASCOAG, RI
SCREENING INSTRUMENT:	DATE: 11/15/01 & 11/19/01
DEPTH TO WATER:	LOGGED BY: A. DURFEE

RISER: TYPE STEEL DIAMETER 4" LENGTH 23' WELL SEAL: HOLE DIA.:

SCREEN: TYPE SLOT DIAMETER LENGTH SAND PACK: TOTAL DEPTH: 60'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	20						
	21						
	22					3" CASING	
	23						
	24						
	25						
	26					3" CASING	
	27						
	28						
	29						
	30						
	31						AIR HAMMER – COMPETENT ROCK
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						

L'NCOLN ENVIRONMENTAL, INC.	WELL LOG AND COMPLETION REPORT	PAGE 3 of 3

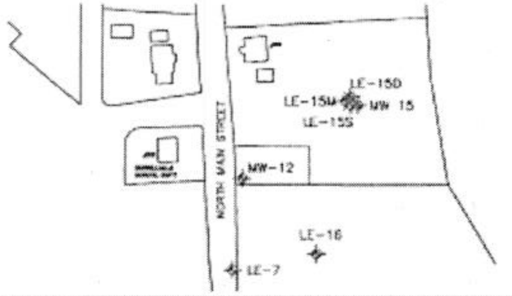


DRILLED BY:	TDS	PROJECT NUMBER:	R1275
DRILLING METHOD:	CASING/AIR HAMMER/ CORE	WELL NUMBER:	LE-15D (CONT.)
SAMPLING METHOD:		LOCATION:	REAR 99 N. MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT:		DATE:	11/15/01 & 11/19/01
DEPTH TO WATER:		LOGGED BY:	A. DURFEE

RISER:	TYPE		DIAMETER	LENGTH	WELL SEAL:	HOLE DIA.:	
SCREEN:	TYPE	SLOT	DIAMETER	LENGTH	SAND PACK:	TOTAL DEPTH:	60'

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	MINUTES PER FOOT	MOISTURE CONTENT	SCREENING RESULTS (ppm)	WELL COMPLETION	LITHOLOGY / REMARKS
	40		6				GRAY-PINK GRANITE WITH SOME GNEISSIC BANDING 40'-45'
	41		4.5				
	42		4				
	43		4				
	44		4				
	45		6				
	46		8				NO SIGNIFICANT FRACTURES
	47		9	*		2" CORE - OPEN HOLE	
	48		9	*			
	49		9	*			
	50		4				
	51		4				
	52		4.5				
	53		5				
	54		6				
	55		2.5				
	56		2.5				FRACTURES EVIDENT
	57		3				
	58		3.5				* - SUSPECT GLAZING OF BIT BIT CHANGED @ 50'
	59		3.5				
	60						BOTTOM OF BORING @ 60'

I 'NCOLN ENVIRONMENTAL, INC. | WELL LOG AND COMPLETION REPORT | PAGE 1 of 2

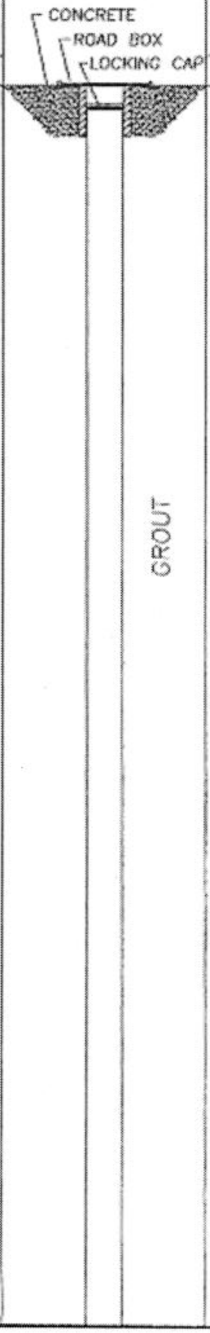


DRILLED BY: TDS
DRILLING METHOD: H.S. AUGER / AIR HAMMER
SAMPLING METHOD: SPLIT SPOON
SCREENING INSTRUMENT: OVM 580B
DEPTH TO WATER: 34'
PROJECT NUMBER: R1275
WELL NUMBER: LE-16
LOCATION: BRADFORD COURT PASCOAG, RI
DATE: 11/20/01,11/21/01, 11/26/01
LOGGED BY: B. CORREIRA

RISER: TYPE STEEL DIAMETER 4" LENGTH 36'
WELL SEAL:
HOLE DIA.: 8 1/4"
SCREEN: NONE TYPE SLOT DIAMETER LENGTH
SAND PACK:
TOTAL DEPTH:

SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	0					ASPHALT
A-1	1			D	0	0.5'-2': TAN, FINE TO MEDIUM SAND, DRY
	2					
	3					
	4					
	5		30			
S-2	6	20"	40 33 22	D	0	5'-7': BROWN, FINE TO MEDIUM SAND, SILT, ANGULAR FINE TO COARSE GRAVEL, DRY (AIR HAMMER 5'-10', RUN NOT TIMED, LIGHT GRAY GRANITE)
	7					
	8					
	9					
	10		22			10'-12': BROWN, FINE TO MEDIUM SAND, SILT, SUBANGULAR FINE TO COARSE GRAVEL, DRY
S-3	11	12"	13 74	D	0	(AIR HAMMER 10'-15': START RUN 11:25:30 END 11:27:25 LIGHT GRAY GRANITE - (AUGER REFUSAL-MOVE 10' BACK) (AIR HAMMER 12'-17' START RUN 1:30:35 END 1:32:20 LIGHT GRAY GRANITE)
	12		120/1"			
	13					
	14					
	15					
	16					15'-17': SAME AS ABOVE (10'-12')
	17					
	18					
	19					
	20					

WELL COMPLETION



LINCOLN ENVIRONMENTAL, INC.

WELL LOG AND COMPLETION REPORT

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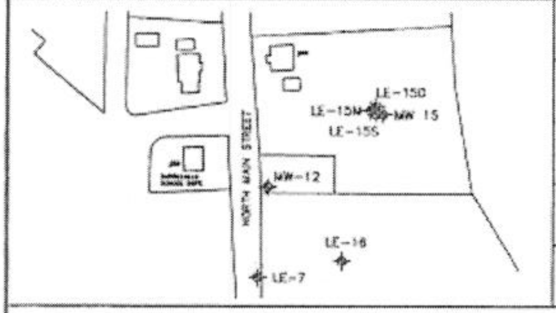
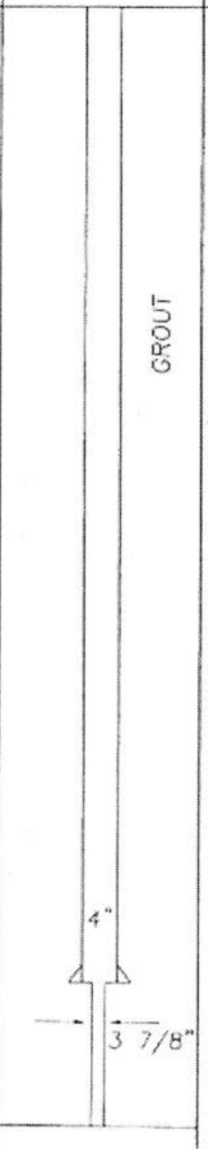


DRILLED BY: TDS
PROJECT NUMBER: R1275
DRILLING METHOD: H.S. AUGER / AIR HAMMER
WELL NUMBER: LE-16 (CONT.)
SAMPLING METHOD: SPLIT SPOON
LOCATION: 99 NORTH MAIN STREET PASCOAG, RI
SCREENING INSTRUMENT: OVM
DATE: 11/20/01, 11/21/01, 11/26/01
DEPTH TO WATER: 34'
LOGGED BY: B. CORREIRA

RISER: TYPE STEEL DIAMETER 4" LENGTH 36'
WELL SEAL:
HOLE DIA.: 8 1/4"
SCREEN: NONE TYPE SLOT DIAMETER LENGTH
SAND PACK:
TOTAL DEPTH:

WELL COMPLETION



SAMPLE NO.	DEPTH	SAMPLE RECOVERY	BLOW COUNT PER 6"	MOISTURE CONTENT	SCREENING RESULTS (ppm)	LITHOLOGY / REMARKS
	20		21			
S-5	21	24"	13 10 12	D	0	20'-21': BROWN, FINE TO MEDIUM SAND, SILT SUBROUNDED & SUBANGULAR FINE GRAVEL, DRY
	22					21'-22': TAN FINE TO MEDIUM SAND, SOME COARSE SAND AND SUBROUNDED FINE GRAVEL, DRY
	23					
	24					
	25		7			
S-6	26	12"	8 9 6	D	0	25'-27': TAN, FINE TO MEDIUM SAND, DRY
	27					
	28					
	29					
S-7	30		19 100/1"			30'-32': TAN, FINE TO MEDIUM SAND, SOME SILT AND SUBANGULAR FINE GRAVEL, MOIST TO WET TOP OF BEDROCK @ 30' AIR HAMMER 30'-36': START RUN 8"52"30 END 9:07:!5 LIGHT GRAY GRANITE, WATER @ 34') SET 4-INCH DIAMETER CASING @ 36'
	31					
	32					
	33					11/26/01 DRILLED OUT GROUT BOTTOM OF HOLE @ 37' TRIPPED IN WITH CORE BARREL. CORED 1.5' IN 5 MINS PIPE WHIPPING AND HOLE LOOSING WATER DURING CORING. PULLED CORE BARREL. WATER DEPTH @ 32'. BAILED 12 BAILS. WATER STAYS @ 32'. WATER HEADSPACE: 108 PPM. CORE: RECOVERED 1.5' GRANITE GNEISS, GRAY, COARSE GRAINED. TWO HORIZONTAL BREAKS, ONE APPEARS STAINED, ONE HIGH ANGLE BREAK AT BOTTOM OF CORE. HIGH ANGULE BREAK APPEARS TO BE SHEARED BUT IS STAINED
	34					
A-8	35			S	0	
	36					
	37					
	38					
	39					COMPLETED AS OPEN HOLE IN ROCK, 3 7/8" DIAMETER
	40					TD @ 38'-3"

[illegible] BORING REPORT

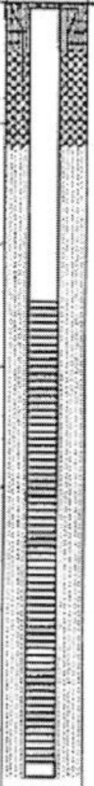
PROJECT:	Pascoag mobil	BORING NO.	B-1 / AE-1
LOCATION:	24 North Main Street	PAGE 1 OF	1
DRILLING CO:	Subsurface Drilling	DATE STARTED:	9/20/01
EQUIPMENT:	Geoprobe	DATE FINISHED:	9/20/01
DRILLED BY:	John Halapurda	SURFACE ELEVATION:	~399'
INSPECTED BY:	Jay Romano		

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ____

DEPTH	STABILIZATION TIME
10'	

	CASING	SAMPLER	CORE BAR
TYPE:		Casing	
SIZE ID:		1-3/8"	
HAMMER WT:			
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches)				WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
		0-6	6-12	12-18	18-24						
5.0	0'-5'	NA	NA	NA	NA			SURFACE: Sand/Large Gravel Glacial Till; Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	AE-1(0-5)	60/60	18.5
10.0	5'-10'	NA	NA	NA	NA			Similiar to 0 - 5 ', Wet	AE-1(5-10)	60/60	537
	10'-12'	NA	NA	NA	NA		▽	Similiar to 5' - 10'	AE-1(10-12)	24/24	>2000
15.0	12'-14'	NA	NA	NA	NA			Similiar to 10'-12'	AE-1(12-14)	24/24	>2000
20.0								Bedrock at 16.5'			

GENERAL REMARKS: N.D. – None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

- ▦ Concrete
- ▩ Bentonite
- ░ Sand Pack
- ☰ Screen
- ☐ Native Fill

[illegible]

PROJECT: Pascoag mobil
LOCATION: 24 North Main Street
DRILLING CO: Subsurface Drilling
EQUIPMENT: Geoprobe
DRILLED BY: John Halapurda
INSPECTED BY: Jay Romano

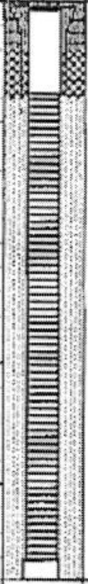
BORING NO. B-2 / AE-2
PAGE 1 OF 1
DATE STARTED: 9/20/01
DATE FINISHED: 9/20/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ____

DEPTH	STABILIZATION TIME
9.5'	

	CASING	SAMPLER	CORE BAR
TYPE:		Casing	
SIZE ID:		1-3/8"	
HAMMER WT:			
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches)				WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
		0-6	6-12	12-18	18-24						
	0'-5'	NA	NA	NA	NA			**SURFACE: Asphalt** Glacial Till; Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	AE-2(0-5)	60/60	23.5
5.0											
	5'-10'	NA	NA	NA	NA			Similar to 0' - 5'	AE-2(5-10)	60/60	>2000
10.0							▽				
	10'-12'	NA	NA	NA	NA			Similiar to 5' - 10'	AE-2(10-12)	24/24	>2000
								Bedrock at 12'			
15.0											
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▥	Concrete	☰	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack		

PROJECT: Pascoag mobil
LOCATION: 24 North Main Street
DRILLING CO: Subsurface Drilling
EQUIPMENT: Geoprobe
DRILLED BY: John Halapurda
INSPECTED BY: Jay Romano

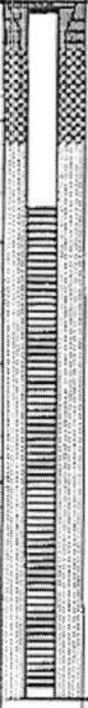
BORING NO. B-3 / AE-3
PAGE 1 OF 1
DATE STARTED: 9/20/01
DATE FINISHED: 9/20/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ____

DEPTH	STABILIZATION TIME
10.5'	

	CASING	SAMPLER	CORE BAR
TYPE:		None	
SIZE ID:			
HAMMER WT:			
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
5.0	0'-5'	NA	NA	NA	NA			**SURFACE: Asphalt** Glacial Till; Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	NS	NS	NS
10.0	5'-10'	NA	NA	NA	NA			Similar to 0' - 5'	NS	NS	NS
15.0	10'-15'	NA	NA	NA	NA		▽	Similiar to 5' - 10'	NS	NS	NS
20.0								Bedrock at 14.5'			

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.
NS = No sample was recovered for screening.

Well Legend
▦ Concrete
▩ Bentonite
░ Sand Pack
☰ Screen
☐ Native Fill

[illegible]

PROJECT: Pascoag mobil
LOCATION: 24 North Main Street
DRILLING CO: Subsurface Drilling
EQUIPMENT: Geoprobe
DRILLED BY: John Halapurda
INSPECTED BY: Jay Romano

BORING NO B-4
PAGE 1 OF 1
DATE STARTED: 9/20/01
DATE FINISHED: 9/20/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ______

DEPTH	STABILIZATION TIME
10.5'	

	CASING	SAMPLER	CORE BAR
TYPE:		None	
SIZE ID:			
HAMMER WT:			
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches)				WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV
		0-6	6-12	12-18	18-24						
	0'-5'	NA	NA	NA	NA			**SURFACE: Asphalt** Glacial Till, Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	NS	NS	NS
5.0											
	5'-10'	NA	NA	NA	NA			Similar to 0' - 5' No Water	NS	NS	NS
10.0								Bedrock at 9.5' Notes: Four separate boring holes attempted within this area and all had refusal at 9' to 10'. No well was inserted.			
15.0											
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.
NS = No sample was recovered for screening.

Well Legend
- ▦ Concrete
- ▩ Bentonite
- ░ Sand Pack
- ☰ Screen
- ☐ Native Fill

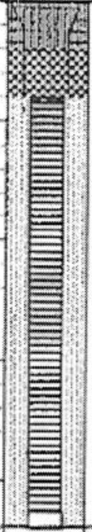
PROJECT:	Pascoag mobil	BORING NO.	B-5 / AE-4
LOCATION:	24 North Main Street	PAGE 1 OF	1
DRILLING CO:	Subsurface Drilling	DATE STARTED:	9/20/01
EQUIPMENT:	Geoprobe	DATE FINISHED:	9/20/01
DRILLED BY:	John Halapunda	SURFACE ELEVATION:	~399'
INSPECTED BY:	Jay Romano		

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME
10'	

	CASING	SAMPLER	CORE BAR
TYPE:		Casing	
SIZE ID:		1-3/8"	
HAMMER WT:			
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
	0'-5'	NA	NA	NA	NA			**SURFACE: Asphalt** Glacial Till; Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	AE-4(0-5)	60/60	17.4
5.0	5'-10'	NA	NA	NA	NA			Similar to 0' - 5'	AE-4(5-10)	60/60	18
10.0	10'-11'	NA	NA	NA	NA		▽	Similar to 5' - 10'	AE-4(10-11)	60/12	15.4
								Bedrock at 11'			
15.0											
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

- ▨ Concrete
- ▩ Bentonite
- ░ Sand Pack
- ☰ Screen
- ☐ Native Fill

PROJECT: Pascoag mobil
LOCATION: 24 North Main Street
DRILLING CO: Subsurface Drilling
EQUIPMENT: Geoprobe
DRILLED BY: John Halapunta
INSPECTED BY: Jay Romano

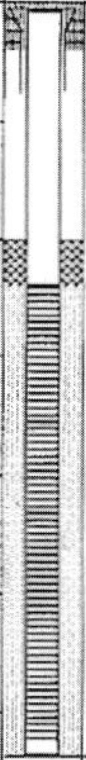
BORING NO. B-6 / AE-5
PAGE 1 OF 1
DATE STARTED: 9/20/01
DATE FINISHED: 9/20/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME
9.5'	

	CASING	SAMPLER	CORE BAR
TYPE:		Casing	
SIZE ID:		1-3/8"	
HAMMER WT:			
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches)				WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
		0-6	6-12	12-18	18-24						
	0'-5'	NA	NA	NA	NA			**SURFACE: Asphalt** Glacial Till; Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	AE-5(0-5)	60/60	137
5.0											
	5'-10'	NA	NA	NA	NA			Similar to 0' - 5'	AE-5(5-10)	60/60	>2000
10.0							▽				
	10'-15'	NA	NA	NA	NA			Similar to 5' - 10'	AE-5(10-15)	60/60	>2000
15.0											
								Bedrock at 16'			
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▦ Concrete
▩ Bentonite
▨ Sand Pack
☰ Screen
☐ Native Fill

PROJECT: Pascoag mobil
LOCATION: 24 North Main Street
DRILLING CO: GeoSearch Environmental Drilling
EQUIPMENT: F6 Mobile Drilling Rig
DRILLED BY: Ken Bylund
INSPECTED BY: Jay Romano

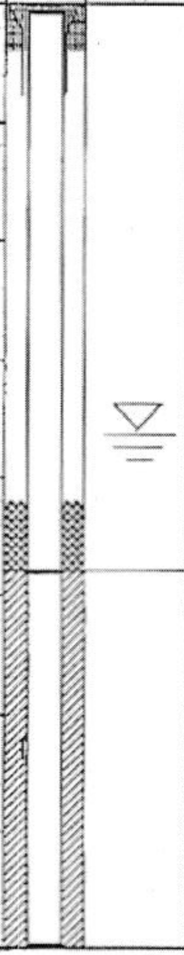
BORING NO. B-7 / AE-6 (BR)
PAGE 1 OF 1
DATE STARTED: 9/21/01
DATE FINISHED: 9/24/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME
10	

	CASING	SAMPLER	CORE BAR
TYPE:	Hollow Stem	SS	
SIZE ID:	6"	1-3/8"	
HAMMER WT:		140	
HAMMER FALL:			



DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
								SURFACE: Asphalt			
5.0											
	5'-7'	NA	NA	NA	NA			Glacial Till, Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	AE-6(5-7)	24/6	8.5
10.0											
	10'-12'	NA	NA	NA	NA			Sumiliar to 5' - 7', Wet	AE-6(10-12)	24/12	8.1
								Bedrock at 12' The 20 feet of bedrock was cored. Solid casing was set in the bedrock The final depth of well is 32 feet. Bedrock was dry until ~ 18' B.G.			
15.0											
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▦	Concrete	☰	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack	▨	Bedrock

PROJECT: Pascoag mobil
LOCATION: 24 North Main Street
DRILLING CO: GeoSearch Environmental Drilling
EQUIPMENT: F6 Mobile Drilling Rig
DRILLED BY: Ken Bylund
INSPECTED BY: Jay Romano

BORING NO. B-8 / AE-7 (BR)
PAGE 1 OF 4
DATE STARTED 9/21/01
DATE FINISHED: 9/24/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ____

DEPTH	STABILIZATION TIME
10.5'	

	CASING	SAMPLER	CORE BAR
TYPE:	Hollow Stem	SS	
SIZE ID:	6"	1-3/8"	
HAMMER WT.		140	
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
								**SURFACE: Asphalt**			
5.0	5'-7'	4	10	10	9			Glacial Till, Gray to Brown Fine to Coarse Sand, Medium Subangular Gravel, 10-15% Inorganic Nonplastic Fines, Moist	AE-7(5-7)	24/4	16.2
10.0	10'-12'	11	24	19	28		▽	Similar to 5' - 7', Wet	AE-7(10-12)	24/18	1933
15.0	15'-17'	11	17	10	9			Similar	AE-7(15-17)	24/18	902
								The 53 feet of bedrock was cored. Solid casing or screen was set into the bedrock. The final depth of well is 75 feet.			
20.0								Bedrock at 19'			

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▥	Concrete	☰	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack	▨	Bedrock

PROJECT: Pascong mobil
LOCATION: 24 North Main Street
DRILLING CO: GeoSearch Environmental Drilling
EQUIPMENT: F6 Mobile Drilling Rig
DRILLED BY: Ken Bylund
INSPECTED BY: Jay Romano

BORING NO: B-8 / AE-7 (BR)
PAGE 2 OF 4
DATE STARTED: 9/21/01
DATE FINISHED: 9/24/01
SURFACE ELEVATION: ~399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME
10.5'	

	CASING	SAMPLER	CORE BAR
TYPE:	Hollow Stem	SS	
SIZE ID:	6"	1-3/8"	
HAMMER WT:		140	
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH	HAMMER BLOWS ON SAMPLER (inches)				WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
	FROM - TO	0-6	6-12	12-18	18-24						
25.0											
30.0											
35.0											
40.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▦	Concrete	☰	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack	▨	Bedrock

PROJECT:	Pascoag mobil	BORING NO.	B-8 / AE-7 (BR)
LOCATION:	24 North Main Street	PAGE 3 OF	4
DRILLING CO:	GeoSearch Environmental Drilling	DATE STARTED:	9/21/01
EQUIPMENT:	F6 Mobile Drilling Rig	DATE FINISHED:	9/24/01
DRILLED BY:	Ken Bylund	SURFACE ELEVATION:	~399'
INSPECTED BY:	Jay Romano		

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ____

DEPTH	STABILIZATION TIME
10.5'	

	CASING	SAMPLER	CORE BAR
TYPE:	Hollow Stem	SS	
SIZE ID:	6"	1-3/8"	
HAMMER WT		140	
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches)				WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV
		0-6	6-12	12-18	18-24						
45.0											
50.0											
55.0											
60.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▦	Concrete	═	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack	▨	Bedrock

[illegible]

PROJECT:	Pascoag mobil	BORING NO.	B-8 / AE-7 (BR)
LOCATION:	24 North Main Street	PAGE 4 OF	4
DRILLING CO:	GeoSearch Environmental Drilling	DATE STARTED:	9/21/01
EQUIPMENT:	F6 Mobile Drilling Rig	DATE FINISHED:	9/24/01
DRILLED BY:	Ken Bylund	SURFACE ELEVATION:	~399'
INSPECTED BY:	Jay Romano		

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME
10.5'	

	CASING	SAMPLER	CORE BAR
TYPE:	Hollow Stem	SS	
SIZE ID:	6"	1-3/8"	
HAMMER WT:		140	
HAMMER FALL:			

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (In./in.)	HNU (ppm) Lamp 10.2 eV.
65.0											
70.0											
75.0											
80.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▦	Concrete	═	Screen
▨	Bentonite	☐	Native Fill
░	Sand Pack	▨	Bedrock

Alliance Environmental Group, Inc. **TEST BORING REPORT**

PROJECT: [illegible]
LOCATION: 24 [illegible]
DRILLING CO: [illegible]
EQUIPMENT: [illegible] Mobile Drill Rig w/[illegible]
DRILLED BY: Steve A. AE-6
INSPECTED BY: JAy [illegible]

BORING NO. B-9/AE-8
PAGE 1 OF 1
DATE STARTED: 10/7/01
DATE FINISHED: 10/7/01
SURFACE ELEVATION: 237'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ____

DEPTH	STABILIZATION TIME

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	Split-Barrel	
SIZE ID:	4-1/4"	1-3/8"	
HAMMER WT:		140 lb	
HAMMER FALL:		24"	

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
	—	—	—	—	—		Natural Fill Grout	SURFACE: Asphalt (U, Ha, st) Glacial Till 30-40% Dark Brown, Med-Large SAG, 20-25 INPE, Moist	—	—	—
5.0							BR - 2.5'	Bedrock @ 2.5'			
								← Bedrock @7'			
10.0								changed from light Gray & soft to Dark Grey & hard			
								Screened Cuttings in [illegible]. = 0.8ppm			
15.0											
20.0								Depth of well = 23.5'			

background = 0.7ppm

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▩	Concrete	☰	Screen
▦	Bentonite	☐	Native Fill
░	Sand Pack		

on 10/9/01
Mike Cote (LIM) - Called @ 9:30 a.m - [illegible] stopping by to [illegible]
[illegible]

Alliance Environmental Group, Inc. TEST BORING REPORT

PROJECT:
LOCATION:
DRILLING CO: Same as
EQUIPMENT: AE-8
DRILLED BY:
INSPECTED BY:

BORING NO. B-10 / AE-9
PAGE 1 OF 1
DATE STARTED: 10/9/01
DATE FINISHED: 10/10/01
SURFACE ELEVATION: 399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:
DEPTH | STABILIZATION TIME

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	Split-Barrel	
SIZE ID:	4-1/4"	1-3/8"	
HAMMER WT.		140 lb	
HAMMER FALL:		24"	

SAMPLE DATA

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
								SURFACE: Asphalt (N. Main St)			
5.0							Grout GREY	Glacial Till, Dark brown, M-SAG mst. Coarse Sand, 10-15 Med-SAG, 5-10% INPF, Moist	—	—	—
10.0								Screened boring: 0.5ppm			
								Casing Depth = 10'			
15.0											
20.0								Depth of well 15' - No water Detected			

background 0.7ppm

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▨	Concrete	═	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack		

Alliance Environmental Group, Inc.

TEST BORING REPORT

PROJECT:
LOCATION:
DRILLING CO: AES
EQUIPMENT: AE-GB
DRILLED BY: Same
INSPECTED BY:

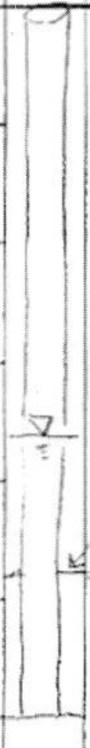
BORING NO: B-11 / AE-10
PAGE 1 OF 1
DATE STARTED: 10/9/01
DATE FINISHED: 10/10/01
SURFACE ELEVATION: 389

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED: ___

DEPTH	STABILIZATION TIME
9	—

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	Split-Barrel	
SIZE ID:	4-1/4"	1-3/8"	
HAMMER WT:		140 lb	
HAMMER FALL:		24"	

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
								SURFACE Coarse Sand (Tan) 10-15% SAG			
5.0											
	5-7	-	-	-	—			Glacial Till 10-15% Tan to Gray, Med-Coarse Sand, 5-10% SAG, 5-10% INPF, Moist	B11/AE10 5-7	24/12	208
10.0											
	10-12	-	—	—	—		Grout	Same as 5-7 wet	B11/AE10 10-12	24/8	250
							BR @12'	SS Refusal @12' Bedrock @12'			
15.0											
								[illegible] 15'			
20.0								15' Cored			

GENERAL REMARKS N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▨	Concrete	▬	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack		

Mike Cole Arrived on Site @ 1:30 pm.

783-5883

Alliance Environmental Group, Inc.

TEST BORING REPORT

PROJECT:
LOCATION:
DRILLING CO: SAME AS
EQUIPMENT:
DRILLED BY: AE-50
INSPECTED BY:

BORING NO. B-12/AE-11
PAGE 1 OF 1
DATE STARTED: 10/9/01
DATE FINISHED: 10/11/01
SURFACE ELEVATION: 399

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	Split-Barrel	
SIZE ID:	4-1/4"	1-3/8"	
HAMMER WT:		140 lb	
HAMMER FALL:		24"	

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV
								SURFACE Tan C-F Sand 10-15% SAG (med)			
5.0											
	5-7	-	-	-	-			F-C Sand; Dark Brown; 10-15% T. URF, Moist Not enough to take sample For lab.	B12/AE-11 5-7	24/2	19
10.0											
	10-12	-	-	-	-		Grnd @e 12'	Glacial Till, Dark Brown, 10-15% Med SAG, 10-15% INPC F-C Sand, Moist	B12/AE11 10-12	24/10	29
15.0											
20.0								Bedrock @ 12' DOW: 25'			

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▨	Concrete	☰	Screen
▩	Bentonite	☐	Native Fill
░	Sand Pack		

Alliance Environmental Group, Inc. **TEST BORING REPORT**

PROJECT: Passaic Mobil
LOCATION: 24 [illegible] Main St
DRILLING CO: [illegible]
EQUIPMENT: F.S. Mobile Drill Rig
DRILLED BY: [illegible]
INSPECTED BY: [illegible]

BORING NO. SB3
PAGE 1 OF 1
DATE STARTED: 10/11/01
DATE FINISHED: 10/11/01
SURFACE ELEVATION: 399'

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	Split-Barrel	
SIZE ID:	4-1/4"	~~1-3/8"~~ 3"	
HAMMER WT:		140 lb	
HAMMER FALL:		24"	

SOIL SAMPLE DATA

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV
								SURFACE: Asphalt (N Main)			
5.0											
	5-7	–					[illegible]	Fill, F-C Dark brown sand, some silt, [illegible], 10-15 [illegible], Moist	SB3/NCR 5-7	24/4	18
10.0											
15.0											
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

▨	Concrete	▭	Screen
▨	Bentonite	▭	Native Fill
▨	Sand Pack		

Alliance Environmental Solutions, Inc. — TEST BORING REPORT

PROJECT:
LOCATION:
DRILLING CO: SAME AS
EQUIPMENT: B13
DRILLED BY:
INSPECTED BY:

BORING NO. B14/AE12
PAGE 1 OF 1
DATE STARTED: 10/11/01
DATE FINISHED: 10/11/01
SURFACE ELEVATION: 355

GROUNDWATER OBSERVATIONS

NOT ENCOUNTERED:

DEPTH	STABILIZATION TIME
9	

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	Split-Barrel	
SIZE ID:	4-1/4"	1-3/8"-3"	
HAMMER WT:		140 lb	
HAMMER FALL:		24"	

SAMPLE DATA

DEPTH (ft)	SAMPLING DEPTH FROM - TO	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL DATA	STRATA CHANGE (ft)	LITHOLOGY (Description of materials)	SAMPLE ID	PEN/ RECOV (in./in.)	HNU (ppm) Lamp 10.2 eV.
								SURFACE: Asphalt (Nathan St)			
5.0	5-7	-	-	-	-	6'		Fill, Dark Brown, F-C Sand, 10-15% INPF, Asphalt cover Odor Detected	B14/AE12 5-7	24/2	2.8
	5-10	-	-	-	-			Brown, Mottled, F-C Sand, 5-10% SLG Gravel; 15-20 INPF. Wet	B14/AE12 8-10	24/18	242
10.0							EB @11'				
15.0											
								Depth of well 11'			
20.0											

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend
▩ Concrete
▨ Bentonite
░ Sand Pack
☰ Screen
☐ Native Fill

FUSS & O'NEILL INC. *Consulting Engineers*
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

Project Name: RI DEM/Silver Lake
Site Id: MW-05
Project Location: Pascoag, Rhode Island
Project Number: 00-469 A14
Logged By: G. Wegmann
Checked By:
Boring Location: Mobil station
Description: Monitoring Well, Shallow
Date(s): 09/06/01 - 09/06/01
Ground Elevation: 0.00'
Datum:
X Coordinate: 9.70
Y Coordinate: -2.17
Total Depth: 14.50'
Completed Depth: 14.00'

Remarks: Field Instrument:
Refusal at 14.5 feet.

Drilling Co.: Subsurface Drilling
Driller: J. Halaburda
Drilling Method: Geoprobe
Borehole Dia.: 3.00in

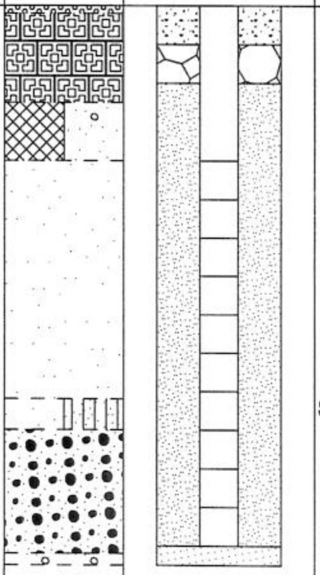
Well Casing:
type: PVC dia: 2.00in fm: 0.0' to: 4.00'

Screens:
type: Slotted size: 0.010in dia: 2.00in fm: 4.00' to: 14.00'

Backfill:

type: Concrete	fm: 0.00'	to: 1.00'
type: Betonite Pellets	fm: 1.00'	to: 2.00'
type: Sand Pack (generic)	fm: 2.00'	to: 14.00'
type: Native Material	fm: 14.00'	to: 14.50'
type:	fm:	to:

Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Graphic Log	Well Construction	Lithologic Code	Field Testing
			-14			0-0.2': ASPHALT. 0.2-2.5': GRAVEL. 2.5-4.0': SAND, little gravel, cinders/coal at 3.5 feet, some small cobbles, black (N1). (Fill). 4.0-5.0': SAND, F-M, trace silt, moderate brown (5YR 4/4). Well sorted.			AS K1	
	1									
	2									
	3		-15						FI/SW	
	4								SP	
-5	5		-16			5.0-9.5': SAND, M, trace F gravel, light brown (5YR 5/6), moist to wet at 9.5 feet. Gasoline odor. 9.5-10': SAND, M-C, dark yellowish orange (10YR 6/6), wet. Tight. Gasoline odor.				
	6									
	7									
	8		-17		▽					
	9									
-10	10		-18			10-10.2': SAND, M-F, trace silt. 10.2-11': Sand and silt, light olive gray (5Y 5/2), wet. Tight. Gasoline odor. 11-14.2': GRAVEL, C, dusky yellowish brown (10YR 2/2). 14.2-14.5': SAND, F-M, little gravel, light brown (5YR 5/6).			SP/SM GP	
	11									
	12									
	13		-19							
	14								SW	
-15	15					End of boring at 14.5 feet.				
	16									
	17									
	18									
	19									
-20	20									
	21									
	22									
	23									
	24									
-25	25									
	26									
	27									
	28									
	29									



Project Name: RI DEM/Silver Lake
Site Id: MW-06
Project Location: Pascoag, Rhode Island
Project Number: 00-469 A14
Logged By: G. Wegmann
Checked By:
Boring Location: Mobil station
Description: Monitoring Well, Shallow
Date(s): 09/06/01 - 09/06/01
Ground Elevation: 0.00'
Datum:
X Coordinate: 8.93
Y Coordinate: -5.92
Total Depth: 14.50'
Completed Depth: 14.00'

Remarks: Field Instrument:
Refusal at 14.5 feet.

FUSS & O'NEILL INC. *Consulting Engineers*
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

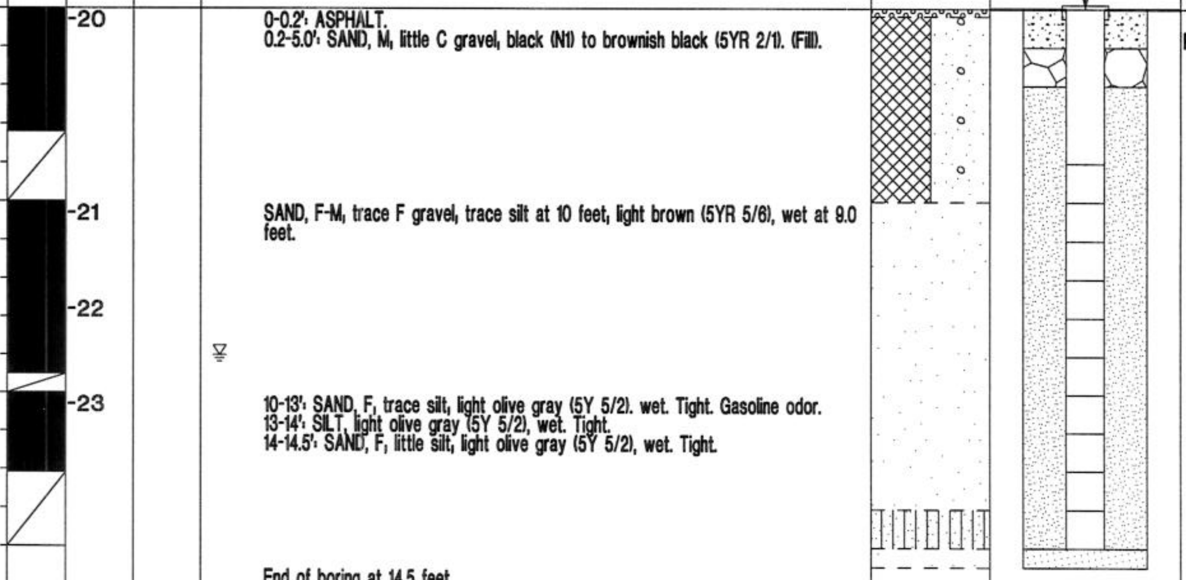
Drilling Co.: Subsurface Drilling
Driller: J. Halaburda
Drilling Method: Geoprobe
Borehole Dia.: 3.00in

Well Casing:
type: PVC dia: 2.00in fm: 0.0' to: 4.00'

Screens:
type: Slotted size: 0.010in dia: 2.00in fm: 4.00' to: 14.00'

Backfill:
type: Concrete fm: 0.00' to: 1.00'
type: Betonite Pellets fm: 1.00' to: 2.00'
type: Sand Pack (generic) fm: 2.00' to: 14.00'
type: Native Material fm: 14.00' to: 14.50'
type: fm: to:

Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Graphic Log	Well Construction MP. EL. 0.00	Lithologic Code	Field Testing
0			-20			0-0.2': ASPHALT. 0.2-5.0': SAND, M, little C gravel, black (N1) to brownish black (5YR 2/1). (Fill).			AS FI/SW	
	1									
	2									
	3									
	4									
-5	5		-21			SAND, F-M, trace F gravel, trace silt at 10 feet, light brown (5YR 5/6), wet at 9.0 feet.			SP	
	6									
	7									
	8		-22							
	9				▽					
-10	10		-23			10-13': SAND, F, trace silt, light olive gray (5Y 5/2). wet. Tight. Gasoline odor. 13-14': SILT, light olive gray (5Y 5/2), wet. Tight. 14-14.5': SAND, F, little silt, light olive gray (5Y 5/2), wet. Tight.				
	11									
	12									
	13								SM	
	14								SP	
-15	15					End of boring at 14.5 feet.				
	16									
	17									
	18									
	19									
-20	20									
	21									
	22									
	23									
	24									
-25	25									
	26									
	27									
	28									
	29									



USS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG

PROJECT: ~~Lakeville Av.~~
LOCATION: Pascoag, RI

SITE ID: SB07 MW7
SHEET 1 OF 1
PROJECT NO: 2000469 A 14

RILLING CO.: SDR
RILLER: John Halaburda
& O REPRESENTATIVE: CCW
RILLING METHOD: Geo-probe
AMPLING METHOD: Macro core
AMMER WT.: — HAMMER FALL (IN): —
ORING LOCATION: see map
ROUND ELEVATION: —
ATE STARTED: 9/6/01 DATE FINISHED: 9/6/01
AMPLE PREFIX: 62401090 6-

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME
		CCW	

~~Time~~ and Date of Completion: 9/6/01 1745

EPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0					asphalt	0.2		
	-26	0-5	2.2/5	—	sand F-M, little gravel (c) 5yr 4/4 weathered rock @4' (1730) mod. brown no odor	4.2	SW	—
					sand (m), well sorted 5yr 4/4		SP	—
5	-27	5-8	2/3 ~~5~~ CCW		Sand (m). well sorted (1735) 5yr 5/6 ~~mod brown~~ CCW no odor, moist light brown		SP.	—
					EOB 8', refusal			
					CCW set well, next day well dry, wait to see if groundwater ~~recharges~~ CCW recharges. before backfilling.			

ORING DIAMETER	BORING METHOD	DEPTH
2"	Geo-probe	8'

REMARKS
Field Instrument = NA

If refusal is encountered, describe all efforts used to confirm:
8'

ROPORTIONS USED:
RACE 0 TO 10%
ITTLE 10 TO 20%
SOME 20 TO 35%
AND 35 TO 50%

eviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout/Chips ______ To ______
Concrete/Asphalt ______ To ______
Other sand 8 To 1

See Monitoring Well Completion Report

FUSS & O'NEILL INC. *Consulting Engineers*
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Project Name: RI DEM/Silver Lake	Site Id: MW-12
Project Location: Pascoag, Rhode Island	Project Number: 00-469 A14
Logged By: B. Kovach	Checked By:
Boring Location: Lot 37, North Main Street	
Description: Monitoring Well, Shallow	Date(s): 09/08/01 - 09/08/01
Ground Elevation: 0.00'	Datum:
X Coordinate: 7.09	Y Coordinate: 4.44
Total Depth: 19.00'	Completed Depth: 19.00'

Remarks: Field Instrument: OVM 580 EZ
Sampler refusal at 18.5 feet.

Drilling Co.: Subsurface Drilling	Driller: J. Halaburda
Drilling Method: Direct-push	Borehole Dia.: 3.00in

Well Casing:

type	dia	fm	to
type: PVC	dia: 2.00in	fm: 0.0'	to: 19.00'

Screens:

type	size	dia	fm	to
type:	size:	dia:	fm:	to:

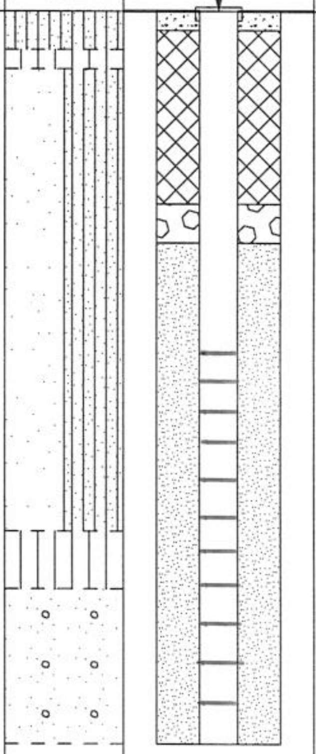
Backfill:

type	fm	to
type: Concrete	fm: 0.00'	to: 0.50'
type: Fill	fm: 0.50'	to: 5.00'
type: Bentonite	fm: 5.00'	to: 6.00'
type: Sand Pack (generic)	fm: 6.00'	to: 19.00'
type:	fm:	to:

Elevation (ft)	Depth (ft)	Sample No.	Blow Count	Water Level	Material Description	Lithologic Code	Field Testing
		-54			0-1.0': SAND, F, little silt, pale yellowish orange (10YR 6/6). 1.0-1.5': SILT, some F sand, dusky yellowish brown (10YR 2/2). 1.5-5.0': SAND, F, alternating layers with little silt and M sand, pale yellowish orange (10YR 6/6).	SM	0 ppm
	1					ML	
	2					SP/SM	
	3	-55					
	4						
-5	5	-56			Same as above.		0 ppm
	6						
	7						
	8	-57					
	9						
-10	10	-58			10-13.5': Same as above. 13.5-15': SILT, some F sand, wet (perched water).		0 ppm
	11						
	12						
	13	-59					
	14					ML	
-15	15	-60			SAND, F-M, trace M subrounded gravel, pale yellowish orange (10YR 6/6), moist. Slight odor.	SW	154 ppm
	16						
	17						
	18						
	19				End of boring at 19 feet.		
-20	20						
	21						
	22						
	23						
	24						
-25	25						
	26						
	27						
	28						
	29						

Graphic Log

Well Construction
MP. EL. 0.00

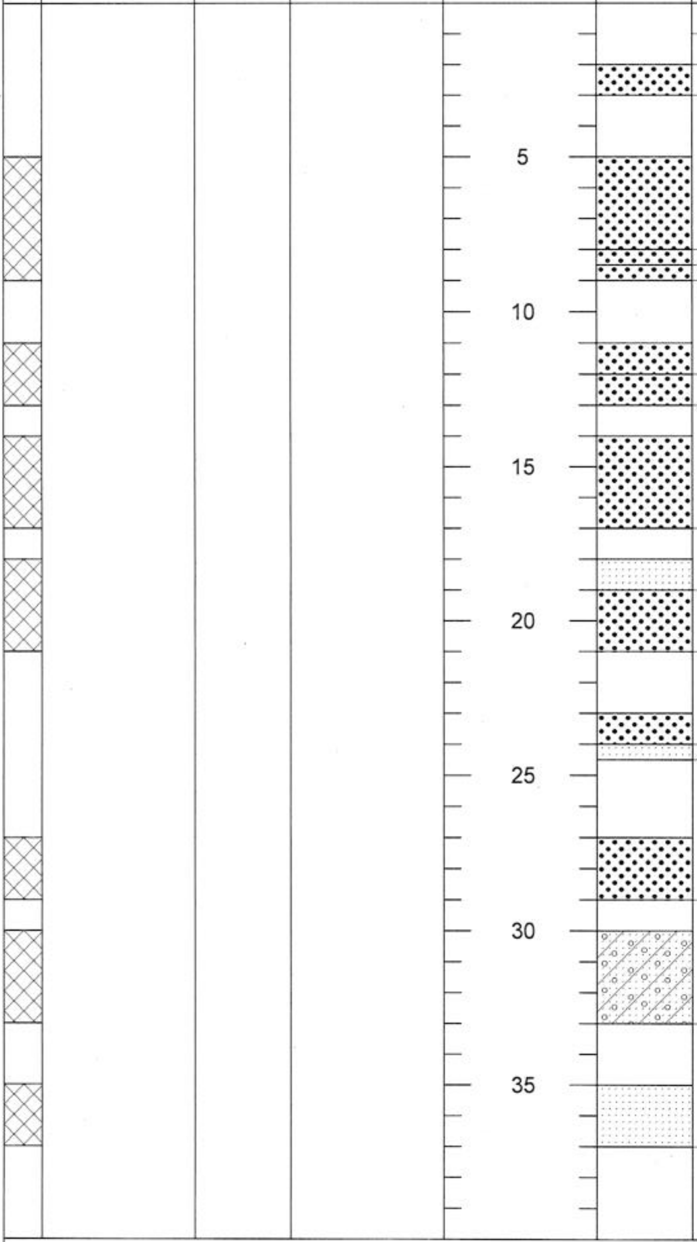


F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: GEOPROBE	Date Drilled:	6-15-06	Logged By:	
Boring Dia: Inches	Boring Number:	MW-14	M COTE	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Very loose, Light Gray, FINE SAND, dry, Non Plastic/Non Cohesive

Very loose, Light Gray, FINE SAND, wet, Non Plastic/Non Cohesive

Very loose, Light Gray, COARSE SAND, wet, Non Plastic/Non Cohesive

Very loose, Light Gray, FINE SAND, wet, Non Plastic/Non Cohesive

Loose, Light Gray, FINE SAND, wet, Non Plastic/Non Cohesive

Very loose, Light Gray, MEDIUM SAND, wet, Non Plastic/Non Cohesive

Very loose, Light Gray, FINE SAND, wet, Non Plastic/Non Cohesive 16.5 -17 dark red mottling

Loose, Red, FINE SAND, wet, Non Plastic/Non Cohesive, trace medium and coarse sands

Medium dense, Gray, FINE SAND, wet, Non Plastic/Non Cohesive

Loose, Tan, FINE SAND, wet, Non Plastic/Non Cohesive

Very loose, Tan, MEDIUM SAND, wet, Non Plastic/Non Cohesive, little coarse sand, pieces of rock

Loose, Tan, FINE SAND, wet, Non Plastic/Non Cohesive, red mottling throughout

Medium dense, Gray, VERY FINE SAND, wet, Non Plastic/Non Cohesive

Dense, Dark Gray, VERY FINE SAND, wet, Non Plastic/Non Cohesive, trace coarse sand, some silt

Completion Notes:

SOIL BORING ONLY, REFUSAL AT 42 FEET, BEDROCK IN CORE NOTED AT 42 FEET

Site:

PASCOAG MOBIL
24 NORTH MAIN STREET
PASCOAG,

Project No.: LS 0329

F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	GEOPROBE	Date Drilled:	6-15-06	Logged By:	
Boring Dia:	Inches	Boring Number:	MW-14	M COTE	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
☒						
				45		
				50		
				55		
				60		
				65		
				70		
				75		

Completion Notes:

SOIL BORING ONLY, REFUSAL AT 42 FEET, BEDROCK IN CORE NOTED AT 42 FEET

Site:

PASCOAG MOBIL
24 NORTH MAIN STREET
PASCOAG,

Project No.: LS 0329

Page 2

Project Name: RI DEM/Silver Lake
Site Id: MW-14S
Project Location: Pascoag, Rhode Island
Project Number: 00-469 A14

FUSS & O'NEILL INC. *Consulting Engineers*
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

Logged By: B. Kovach
Checked By:
Boring Location:
Description: Monitoring Well, Shallow
Date(s): 09/08/01 - 09/08/01
Ground Elevation: 0.00'
Datum:
X Coordinate: 7.21
Y Coordinate: -3.10
Total Depth: 25.00'
Completed Depth: 25.00'
Remarks: Field Instrument: OVM 580 EZ

Drilling Co.: Subsurface Drilling
Driller: J. Halaburda
Drilling Method: Direct-push
Borehole Dia.: 3.00in

Well Casing:

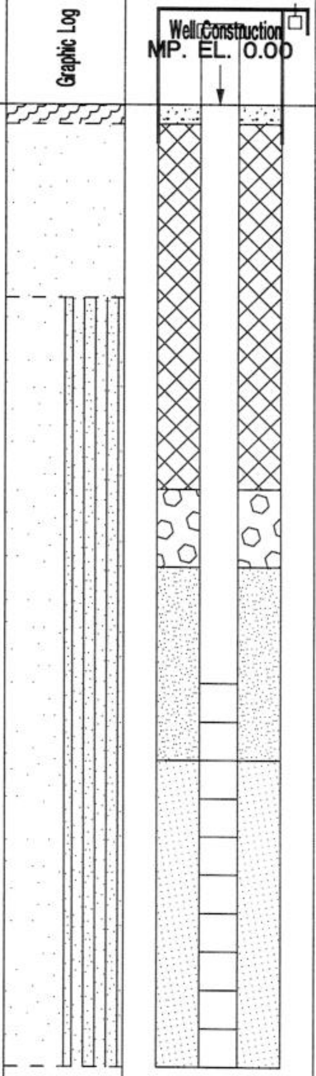
type: PVC		dia: 2.00in	fm: -2.0'	to: 15.00'

Screens:

type: Slotted	size: 0.010in	dia: 2.00in	fm: 15.00'	to: 25.00'

Backfill:

type: Concrete	fm: 0.00'	to: 0.50'
type: Fill	fm: 0.50'	to: 10.00'
type: Bentonite	fm: 10.00'	to: 12.00'
type: Sand Pack (generic)	fm: 12.00'	to: 17.00'
type: Native Material	fm: 17.00'	to: 25.00'



Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Graphic Log	Well Construction	Lithologic Code	Field Testing
						No samples taken. For material descriptions see boring log for MW-14D.			TS SP	0 ppm
	1									
	2									
	3									
	4									
-5	5								SP/SM	0 ppm
	6									
	7									
	8									
	9									
-10	10									0 ppm
	11									
	12									
	13									
	14									
-15	15									0 ppm
	16									
	17									
	18									
	19									
-20	20									
	21									
	22									
	23									
	24									
-25	25					End of boring at 25 feet.				
	26									
	27									
	28									
	29									

Project Name: RI DEM/Silver Lake		Site Id: MW-14D
Project Location: Pascoag, Rhode Island		Project Number: 00-469 A14
Logged By: B. Kovach	Checked By:	
Boring Location:		
Description: Monitoring Well, Deep	Date(s): 09/08/01 - 09/08/01	
Ground Elevation: 0.00'	Datum:	
X Coordinate: 5.20	Y Coordinate: -5.94	
Total Depth: 48.00'	Completed Depth: 45.00'	

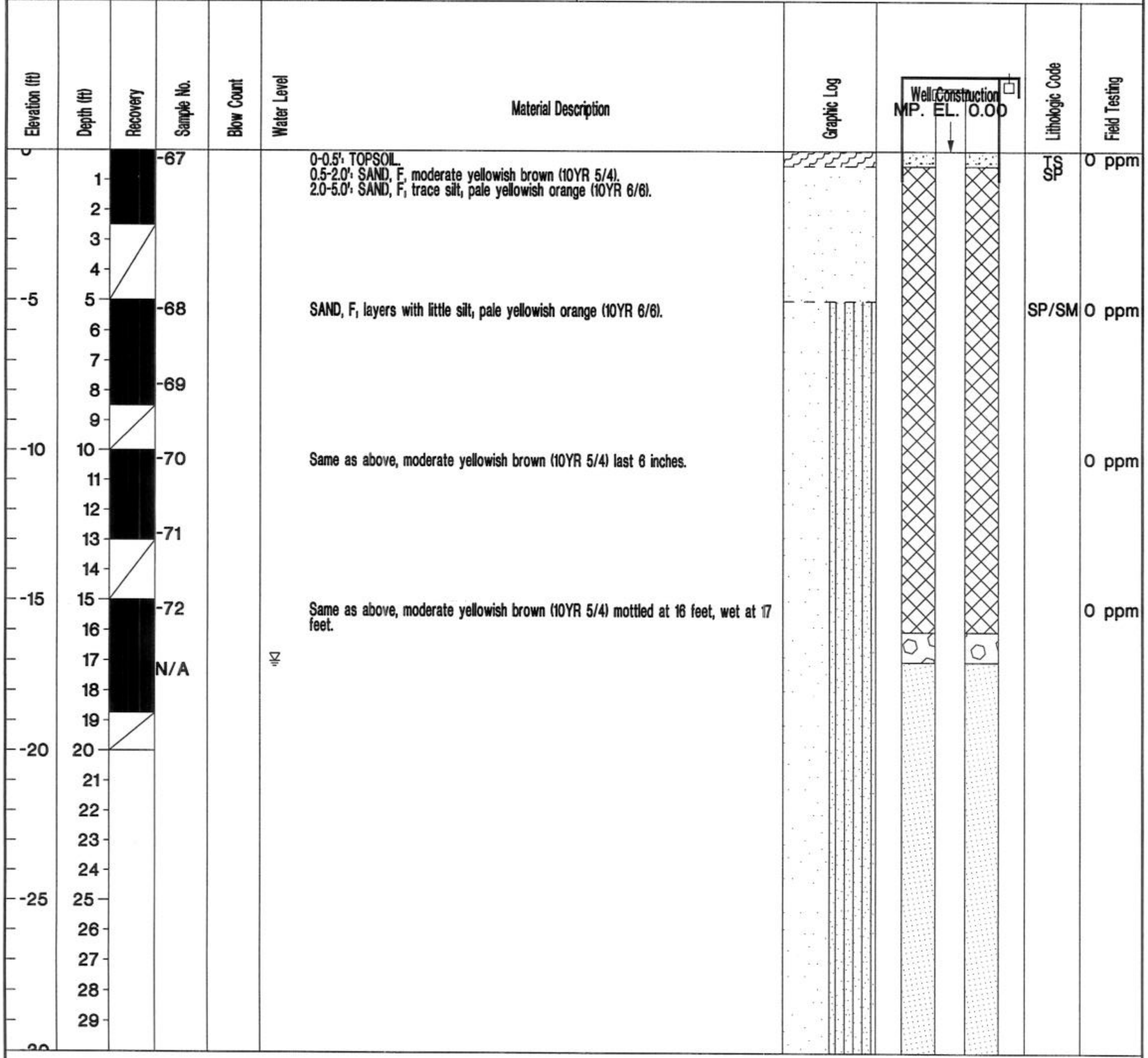
Remarks: Field Instrument: OVM 580 EZ
Refusal at 48 feet.
Groundwater samples taken at 20, 30 and 40 feet.

FUSS & O'NEILL INC. *Consulting Engineers*
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

Drilling Co.: Subsurface Drilling		Driller: J. Halaburda		
Drilling Method: Direct-push				Borehole Dia.: 3.00in
Well Casing: type: PVC		dia: 2.00in	fm: -2.0'	to: 40.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 40.00'	to: 45.00'

Backfill:

type: Concrete	fm: 0.00'	to: 0.50'
type: Fill	fm: 0.50'	to: 16.00'
type: Bentonite	fm: 16.00'	to: 17.00'
type: Native Material	fm: 17.00'	to: 48.00'
type:	fm:	to:



Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Graphic Log	Well Construction	Lithologic Code	Field Testing
0	0		-67			0-0.5': TOPSOIL. 0.5-2.0': SAND, F, moderate yellowish brown (10YR 5/4). 2.0-5.0': SAND, F, trace silt, pale yellowish orange (10YR 6/6).			TS SP	0 ppm
-5	5		-68			SAND, F, layers with little silt, pale yellowish orange (10YR 6/6).			SP/SM	0 ppm
	8		-69							
-10	10		-70			Same as above, moderate yellowish brown (10YR 5/4) last 6 inches.				0 ppm
	13		-71							
-15	15		-72			Same as above, moderate yellowish brown (10YR 5/4) mottled at 16 feet, wet at 17 feet.				0 ppm
	17		N/A		∇					

Project Name: RI DEM/Silver Lake
Site Id: MW-14D
Project Location: Pascoag, Rhode Island
Project Number: 00-469 A14
Logged By: B. Kovach
Checked By:
Boring Location:
Description: Monitoring Well, Deep
Date(s): 09/08/01 - 09/08/01
Ground Elevation: 0.00'
Datum:
X Coordinate: 5.20
Y Coordinate: -5.94
Total Depth: 48.00'
Completed Depth: 45.00'

Remarks: Field Instrument: OVM 580 EZ
Refusal at 48 feet.
Groundwater samples taken at 20, 30 and 40 feet.

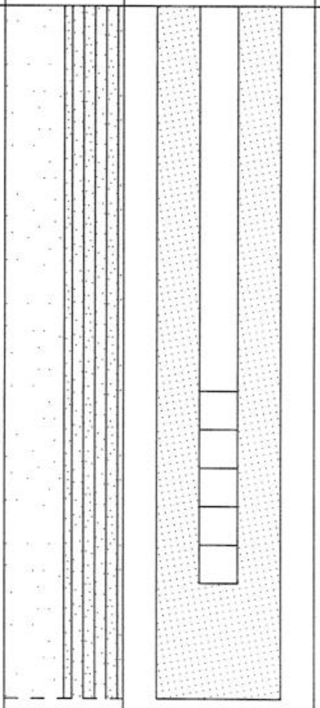
FUSS & O'NEILL INC. *Consulting Engineers*
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

Drilling Co.: Subsurface Drilling
Driller: J. Halaburda
Drilling Method: Direct-push
Borehole Dia.: 3.00in

Well Casing:
type: PVC dia: 2.00in fm: -2.0' to: 40.00'

Screens:
type: Slotted size: 0.010in dia: 2.00in fm: 40.00' to: 45.00'

Backfill:
type: Concrete fm: 0.00' to: 0.50'
type: Fill fm: 0.50' to: 16.00'
type: Bentonite fm: 16.00' to: 17.00'
type: Native Material fm: 17.00' to: 48.00'
type: fm: to:



Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Graphic Log	Well Construction	Lithologic Code	Field Testing
	31									
	32									
	33									
	34									
-35	35									
	36									
	37									
	38									
	39									
-40	40									
	41									
	42									
	43									
	44									
-45	45									
	46									
	47									
	48					End of boring at 48 feet.				
	49									
-50	50									
	51									
	52									
	53									
	54									
-55	55									
	56									
	57									
	58									
	59									

Project Name: RI DEM/Silver Lake	Site Id: MW-15
Project Location: Pascoag, Rhode Island	Project Number: 00-469 A14
Logged By: B. Kovach	Checked By:
Boring Location: 99 North Main Street	
Description: Monitoring Well, Shallow	Date(s): 09/08/01 - 09/08/01
Ground Elevation: 0.00'	Datum:
X Coordinate: -0.06	Y Coordinate: -6.56
Total Depth: 38.00'	Completed Depth: 22.00'

Remarks: Field Instrument: OVM 580 EZ
Refusal at 38 feet.
Groundwater sample taken at 15, 25 and 32 feet.

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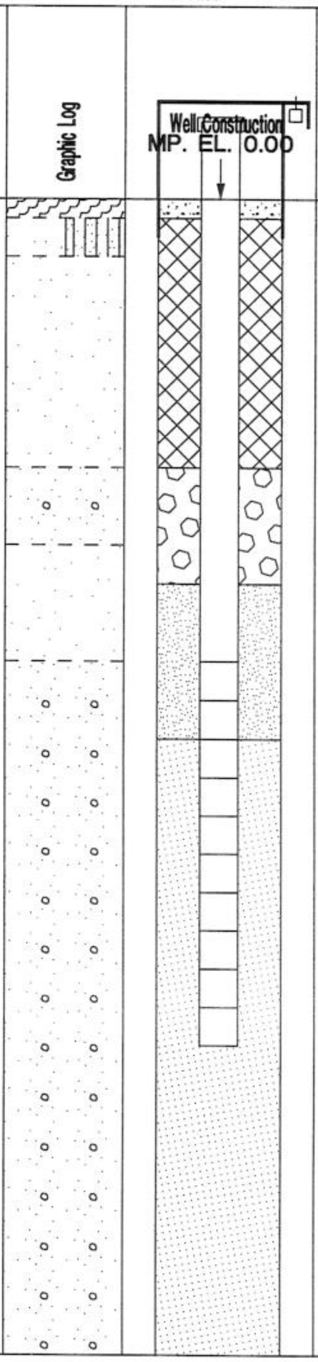
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

Drilling Co.: Subsurface Drilling			Driller: J. Halaburda	
Drilling Method: Direct-push				Borehole Dia.: 3.00in
Well Casing: type: PVC		dia: 2.00in	fm: -2.0'	to: 12.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 12.00'	to: 22.00'
Backfill: type: Concrete			fm: 0.00'	to: 0.50'
type: Fill			fm: 0.50'	to: 7.00'
type: Bentonite			fm: 7.00'	to: 10.00'
type: Sand Pack (generic)			fm: 10.00'	to: 14.00'
type: Native Material			fm: 14.00'	to: 38.00'

Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Lithologic Code	Field Testing
			-76			0-0.5': TOPSOIL. 0.5-1.5': SAND, F, trace to little silt, moderate yellowish brown (10YR 5/4). 1.5-5.0': SAND, F, some F-M subangular gravel, pale yellowish orange (10YR 6/6).	TS SP/SM	0 ppm
	1							
	2						SP	
	3							
	4							
-5	5		-77			5.0-7.0': Same as above. 7.0-9.0': SAND, F-M, some F-M subangular gravel, pale yellowish orange (10YR 6/6). 9.0-10': SAND, F, some F-M subangular gravel, pale yellowish orange (10YR 6/6).		0 ppm
	6							
	7						SW	
	8		-78					
	9						SP	
-10	10		-79			10-12': Same as above. 12-15': SAND, F-C, little F gravel, wet at 13.5 feet.		0.1 ppm
	11							
	12						SW	
	13		-80		▽			0.2 ppm
	14							
-15	15							
	16							
	17							
	18							
	19							
-20	20							
	21							
	22							
	23							
	24							
-25	25							
	26							
	27							
	28							
	29							



Project Name: RI DEM/Silver Lake
Site Id: MW-15
Project Location: Pascoag, Rhode Island
Project Number: 00-469 A14
Logged By: B. Kovach
Checked By:
Boring Location: 99 North Main Street
Description: Monitoring Well, Shallow
Date(s): 09/08/01 - 09/08/01
Ground Elevation: 0.00'
Datum:
X Coordinate: -0.06
Y Coordinate: -6.56
Total Depth: 38.00'
Completed Depth: 22.00'
Remarks: Field Instrument: OVM 580 EZ
Refusal at 38 feet.
Groundwater sample taken at 15, 25 and 32 feet.

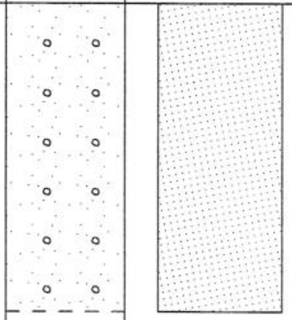
FUSS & O'NEILL INC. *Consulting Engineers*
146 HARTFORD ROAD, MANCHESTER, CONNECTICUT 06040
(203) 646-2469

Drilling Co.: Subsurface Drilling
Driller: J. Halaburda
Drilling Method: Direct-push
Borehole Dia.: 3.00in

Well Casing:
type: PVC dia: 2.00in fm: -2.0' to: 12.00'

Screens:
type: Slotted size: 0.010in dia: 2.00in fm: 12.00' to: 22.00'

Backfill:
type: Concrete fm: 0.00' to: 0.50'
type: Fill fm: 0.50' to: 7.00'
type: Bentonite fm: 7.00' to: 10.00'
type: Sand Pack (generic) fm: 10.00' to: 14.00'
type: Native Material fm: 14.00' to: 38.00'

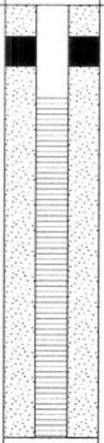


Elevation (ft)	Depth (ft)	Recovery	Sample No.	Blow Count	Water Level	Material Description	Graphic Log	Well Construction	Lithologic Code	Field Testing
	31									
	32									
	33									
	34									
-35	35									
	36									
	37									
	38					End of boring at 38 feet.				
	39									
-40	40									
	41									
	42									
	43									
	44									
-45	45									
	46									
	47									
	48									
	49									
-50	50									
	51									
	52									
	53									
	54									
-55	55									
	56									
	57									
	58									
	59									

F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled:	Logged By:	
Boring Dia: 1.5" Inches	Boring Number: MW-18	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
						
				5		
				10		
				15		
				20		
				25		
				30		
				35		

Completion Notes:

14 Feet total depth, 10 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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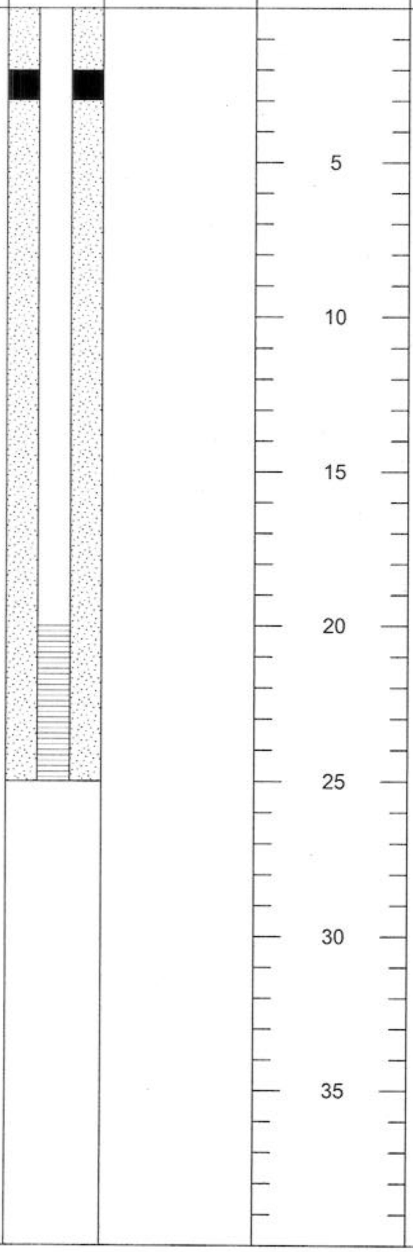
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	8-4-04	Logged By:
Boring Dia:	1.5" Inches	Boring Number:	MW-18D	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

25 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
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F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
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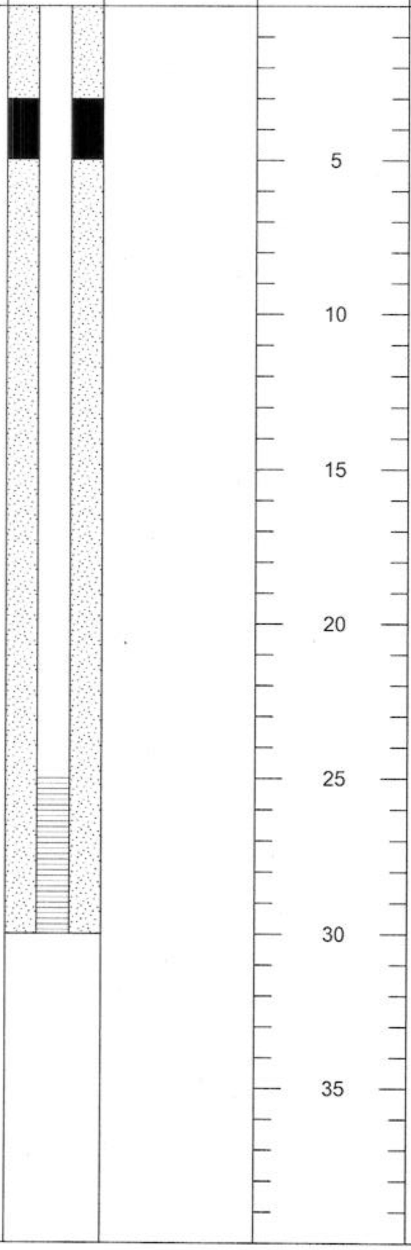
BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	2-4-02	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-20D	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken, 30 feet total depth, 5 feet screen

Site:

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24 North Main Street
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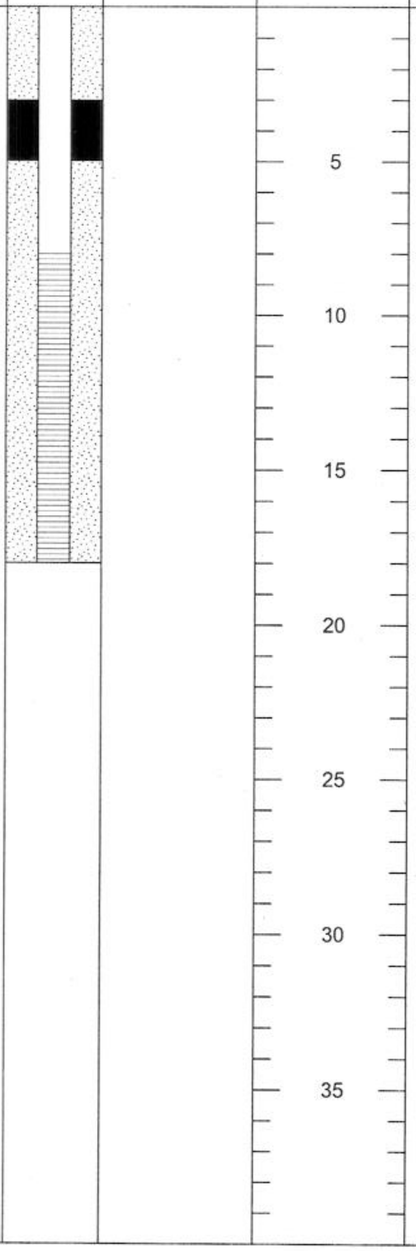
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	2-4-02	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-20S	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

18 feet total depth, 10 feet screen, NO SOIL SAMPLES TAKEN

Site:

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24 North Main Street
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F.I.R.S.T.
FIELD INVESTIGATION
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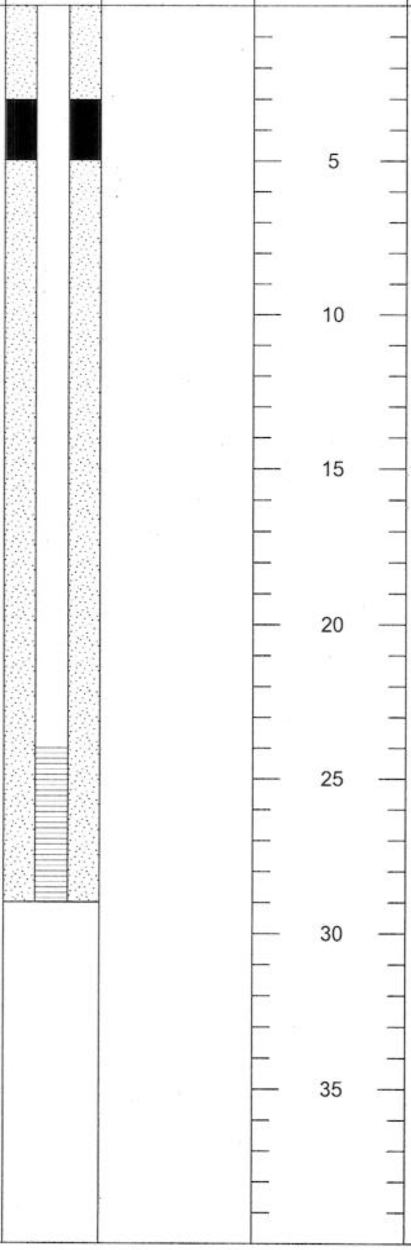
BORING LOG

Drill Rig: Geoprobe	Date Drilled:	2-4-02	Logged By:	
Boring Dia: 1.5" Inches	Boring Number:	MW-21D	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken, 29 feet total depth, 5 feet screen

Site:

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F.I.R.S.T.
FIELD INVESTIGATION
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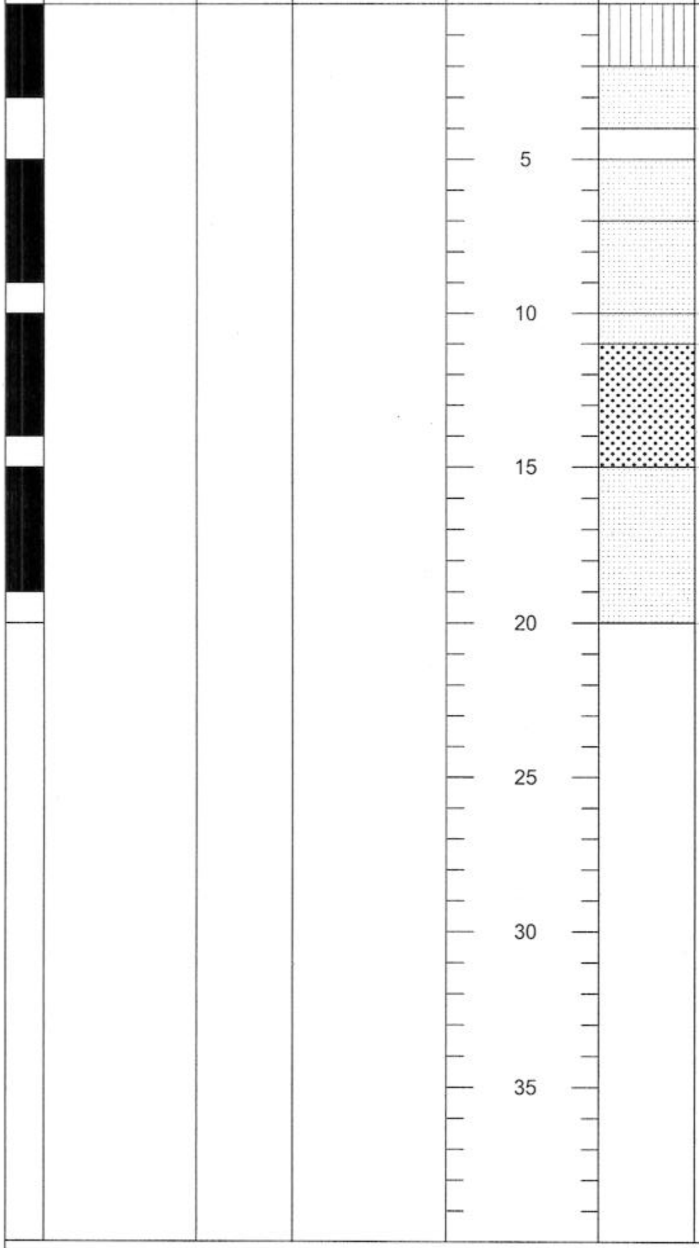
BORING LOG

Drill Rig: Geoprobe	Date Drilled:	Logged By:
Boring Dia: Inches	Boring Number MW-28/M0502	m cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Med Dense, Dark Brown/black, ORGANIC, dry, NP/NC

Very loose, Reddish/tan, FINE SAND, dry, NP/NC

Very loose, Tan, FINE SAND, moist, NP/NC, trace fine and coarse gravel

Very loose, Tan, MED SAND, moist, NP/NC, some fine and coarse gravel, red mottle at 7 feet

Loose, light tan, MED SAND, wet, NP/NC, some fine and coarse gravel

Very loose, light Tan, FINE SAND, wet, NP/NC

Loose, light gray, FINE SAND, wet, NP/NC, trace fine and coarse gravel

Completion Notes:

Total depth: 20', cutting shoe had pieces of rock, could be bedrock. Well construction details on another log

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

Project No.: MB M

MW 28BR

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG
PROJECT: Pascoag Well Install
LOCATION: Pascoag, RI

SITE ID: B-03
SHEET 1 OF 1
PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad
F & O REPRESENTATIVE: BEK
DRILLING METHOD: Rollerbit / Air Rotary
SAMPLING METHOD: NA
HAMMER WT.: NA HAMMER FALL (IN): NA
BORING LOCATION: Summer St. near MW-28D
GROUND ELEVATION: NA
DATE STARTED: 7/12/02 DATE FINISHED: 7/17/02
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0-5	NA	NA	NA	NA	overburden	NA	NA	NA
5-10								
10-15								
15-20								
20-25					Bedrock @ 25' suspect			
28					Broke through rock			
29					Suspect bedrock @ 29'			
31.5					Set casing at 31.5'			
35					31.5-35 ~13 min			
40					35-40' ~15 min possible fracture at 40'			
~~41~~					- lightly moist @ 40'			
44					40-44' ~16 min cuttings: 5B 9/1			
51					44-51' ~20 min			
54					water-bearing fracture at 54'			
60					EOB @ 60'			

BORING DIAMETER	BORING METHOD	DEPTH
4"	Air Rotary	60'

REMARKS
Field Instrument = NA

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10% SOME 20 TO 35%
LITTLE 10 TO 20% AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring Well Completion Report

MW28

FUSS & O'NEILL, INC. CONSULTING ENGINEERS MANCHESTER, CT 06040	BORING LOG PROJECT: Pascoag Well Instal LOCATION: Pascoag, RI	SITE ID: B-02 SHEET 1 OF 1 PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad
F & O REPRESENTATIVE: BEK
DRILLING METHOD: HSA
SAMPLING METHOD: NA
HAMMER WT.: 140 HAMMER FALL (IN): 18
BORING LOCATION: Summer Street
GROUND ELEVATION: NA
DATE STARTED: 7/12/02 DATE FINISHED: 7/12/02
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
5-7	NA	NA	1'/2'	40 45 60 60	coarse sand some gravel 10YR 5/4 moist		GW	–
10-12	↓	↓	1.5'/2'	14 20 24 32	coarse sand little sand little gravel wet 10YR 6/2		GW	–
15-17			1.75'/2'	5 7 10 13	med sand trace gravel 10YR 6/2 wet		SW	–
20-22			1'/2'	7 10 30 32	coarse sand little gravel 10YR 6/2 wet, gas odor		GW	125
25			NA	NA	EOB @ 25'		–	–

BORING DIAMETER	BORING METHOD	DEPTH
4"	HSA	25'

REMARKS
Field Instrument = OVM

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10% SOME 20 TO 35%
LITTLE 10 TO 20% AND 35 TO 50%

Reviewed by Staff:

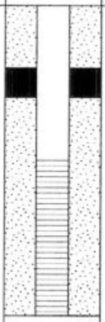
BACKFILL

Native Material	___ To ___		See Monitoring Well
Bentonite Grout	___ To ___		Completion Report
Bentonite Chips	___ To ___		
Other ___	___ To ___		

F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	5-29-02	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-29	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				5 10 15 20 25 30 35		

Completion Notes:
10 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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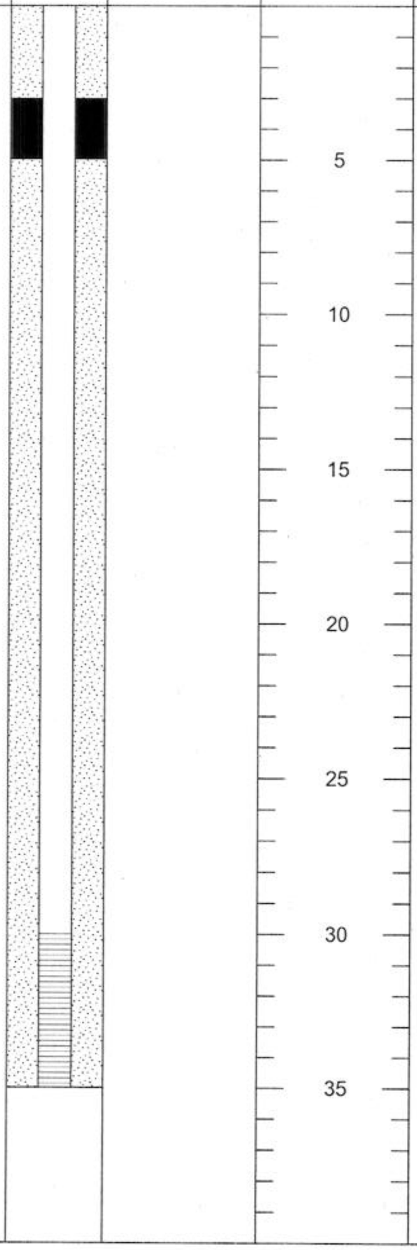
F.I.R.S.T.

FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	5-29-02	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-30D	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken, 305 feet total depth, 5 feet screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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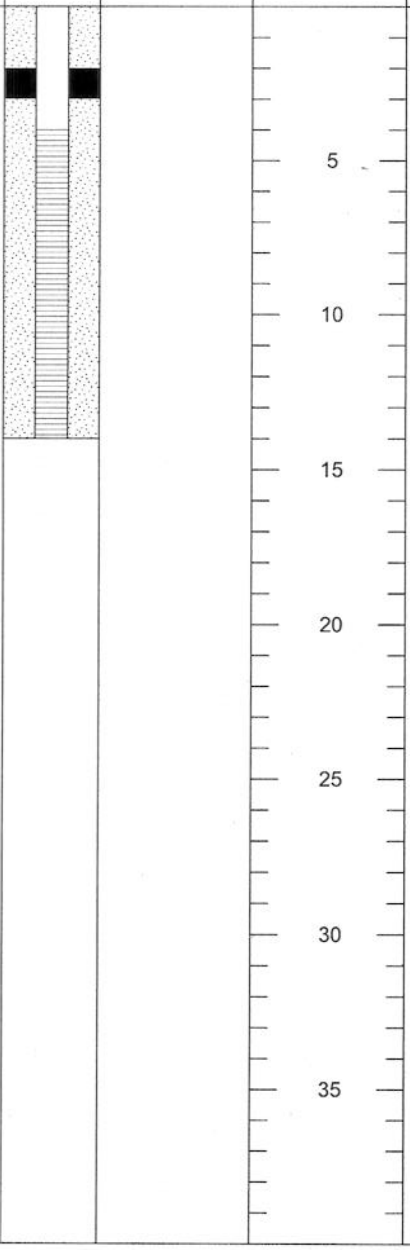
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled: 5-29-02	Logged By:
Boring Dia: 1.5" Inches	Boring Number: MW-30S	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

14 feet total depth, 10 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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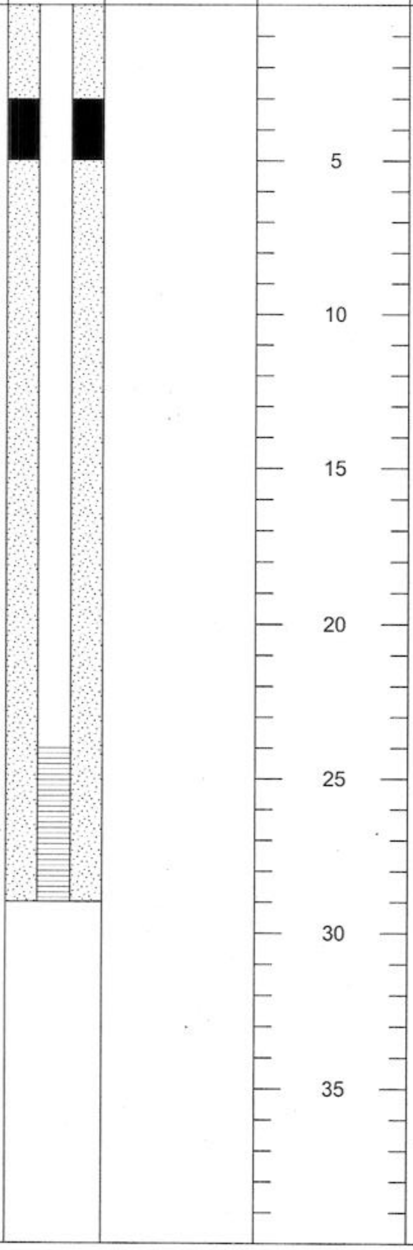
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled: 5-30-02	Logged By:
Boring Dia: 1.5" Inches	Boring Number: MW-31D	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken, 29 feet total depth, 5 feet screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
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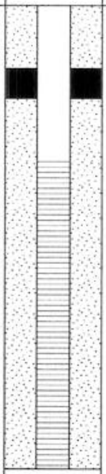
BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	5-30-02	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-31S	M. Cote	



Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				5		
				10		
				15		
				20		
				25		
				30		
				35		

Completion Notes:

15 feet total depth, 10 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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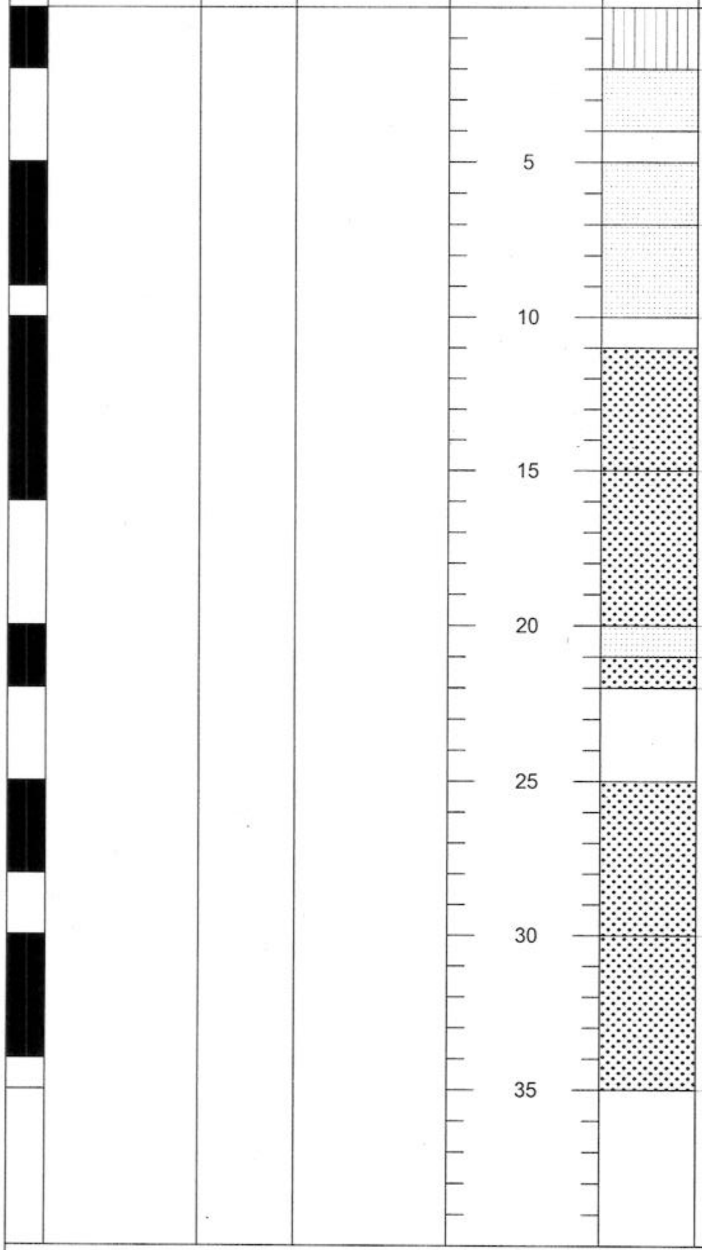
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	3/9/06	Logged By:
Boring Dia:	2 Inches	Boring Number	MW-32/M0507	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



med dense, dark brown/black ORGANIC, dry, NP/NC

Very loose, reddish tan, FINE SAND, poorly graded, dry, NP/NC, trace Coarse sand

Very loose, tan, FINE SAND, poorly graded, moist, NP/NC, trace Coarse sand

Very loose, tan red mottles, MED SAND, poorly graded, moist, NP/NC, some fine and coarse gravel (pieces)

Loose, light tan, MED SAND, poorly graded, wet, NP/NC, some fine and coarse gravel (pieces)

Loose, light gray, FINE SAND, poorly graded, wet, NP/NC, trace coarse sand and fine gravel

Loose, tan, MED SAND, poorly graded, wet, NP/NC,

Loose, tan, FINE SAND, WELL graded, wet, NP/NC, trace med sand

Loose, tan, FINE SAND, WELL graded, wet, NP/NC, trace med sand

Loose, tan, FINE SAND, WELL graded, wet, NP/NC, trace med sand

Completion Notes:

BORING COMPLETED AFTER WELLS WERE SET. SEE WELL COMPLETION LOG FOR MW-32 WELL SET.

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

Project No.: 0329

MW 32

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG
PROJECT: Pascoag Well Install
LOCATION: Pascoag, RI

SITE ID: B-06
SHEET 1 OF 1
PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad + Brian
F & O REPRESENTATIVE: BEK
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon
HAMMER WT.: 140 lbs HAMMER FALL (IN): 24
BORING LOCATION: Corner Stea Lane + Grove St.
GROUND ELEVATION: NA
DATE STARTED: 7/18 DATE FINISHED: 7/18/02
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0	NA	NA	NA	NA	Asphalt	NA	NA	NA
5	↓	↓	↓	↓	overburden med sand, dry	↓	↓	↓
10	↓	↓	↓	↓	wet @ 8'	↓	↓	↓
10-12	NA	NA	1/2'	1 1 1 1	med to corse sand, trace gravel 10YR 5/4 well sorted, wet, gas smell	-	SW	1.8
15-17	NA	NA	1/2'	1 1 1 1	wet; gas smell 10YR 5/4 coarse sand trace gravel	-	SW	~~0.0~~ 1.3
20-22	NA	NA	2/2'	1 1 1 1	wet, no odor 10YR 5/4 coarse sand, trace gravel	-	SW	~~0.0~~ 1.5
25-27	NA	NA	2/2	2 2 3 2	wet, slight gas odor 10 YR 5/4 coarse to med. sand	-	SW	0.3
30-32	↓	↓	2/2	1 3 2 3	wet no odor 10 YR 5/4 med to coarse sand trace gravel	-	SW	0.3
35-37	↓	↓	1/2	12 13 20 31	wet, no odor 10 YR 5/4 coarse sand trace gravel	-	SW	0.3
40-42	↓	↓	2/2	3 2 11 16	wet, no odor 10 YR 5/4 coarse sand trace gravel	-	SW	0.0
45-47	↓	↓	1/2	50 3"	wet no odor 10 YR 5/4 coarse sand trace gravel	-	SW	0.0
					Refusal at 45'			
					EOB @ 45'			

BORING DIAMETER	BORING METHOD	DEPTH
2"	HSA	45'

REMARKS
Field Instrument = PID

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10%
LITTLE 10 TO 20%
SOME 20 TO 35%
AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring Well Completion Report

MW-33

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG

PROJECT: Pascoag Well Instal
LOCATION: Pascoag, RI

SITE ID: B-01
SHEET 1 OF 1
PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad
F & O REPRESENTATIVE: BEK
DRILLING METHOD: HSA / Air Rotary/rollerbit
SAMPLING METHOD: NA
HAMMER WT.: 140 lbs HAMMER FALL (IN): 36
BORING LOCATION: B-01 N. Main St in front of 1105
GROUND ELEVATION:
DATE STARTED: 7/11/02 DATE FINISHED: 7/25/02
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO- LOGIC CODE	FIELD TESTING
0-5	NA	NA	0.5/0.5	100 6"	med sand w/ little gravel 10YR 5/4		SP	–
6	↓	↓	NA	NA	Possible bedrock - probably boulder			–
10	↓	↓	↓	↓	overburden wet			–
13-14'	↓	↓	↓	↓	boulder			–
15.5	↓	↓	↓	↓	bedrock, wet, 5Y 5/2 cuttings	–	–	ND
16.5	↓	↓	↓	↓	in bedrock set casing			
19.5	→				Rollerbit - 3 ft in ~50 min			
22.5					Core - 1 ft in 7 min very light gray			
					metamorphic/ Igneous rock, unfractured gneiss-like			
25.5					same as above			
31					same as above - possible fracture			
36					EOB @ 36'			

BORING DIAMETER	BORING METHOD	DEPTH
6	O-dex/rollerbit	EOB ~~16.5~~' 36'

REMARKS
Field Instrument = OVM

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10% SOME 20 TO 35%
LITTLE 10 TO 20% AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring Well Completion Report

MW 34 BR

FUSS & O'NEILL, INC. CONSULTING ENGINEERS MANCHESTER, CT 06040	BORING LOG PROJECT: Pascoag Well Instal LOCATION: Pascoag, RI	SITE ID: B-04 SHEET 1 OF 1 PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad + John
F & O REPRESENTATIVE: BEK
DRILLING METHOD: HSA/Air Rotary
SAMPLING METHOD: NA
HAMMER WT.: NA HAMMER FALL (IN): NA
BORING LOCATION: Parking lot off N. Main St
GROUND ELEVATION:
DATE STARTED: 7/15/02 DATE FINISHED: 7/18/02
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0	NA	NA	NA	NA	Asphalt	NA	NA	NA
6					hit suspect boulder/bedrock			
11					Set casing at 11' cuttings 10Y 8/2			
16					possible small fracture gasoline smell			
17					11-17' ~38 min. No gas smell			
20					Possible fracture @ 20' moist			
21					Water bearing fracture gas smell			
					17'-21' in ~21 minutes			
26	↓	↓	↓	↓	21'-26' ~19 min. gas smell	↓	↓	↓
					EOB @ 26'			

BORING DIAMETER	BORING METHOD	DEPTH
4"	Air Rotary	26'

REMARKS
Field Instrument = NA

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10%
LITTLE 10 TO 20%
SOME 20 TO 35%
AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring Well Completion Report

MW 38

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG

PROJECT: Pascoag Well Instal
LOCATION: Pascoag, RI

SITE ID: B-11
SHEET 1 OF 2
PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad + John
F & O REPRESENTATIVE: BEK
DRILLING METHOD: Rollerbit
SAMPLING METHOD: NA
HAMMER WT.: NA HAMMER FALL (IN): NA
BORING LOCATION: NW corner of cemetery
GROUND ELEVATION:
DATE STARTED: 7/22/02 DATE FINISHED: 7/24
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0					overburden			
40					wet at 40'			
45					med. sand, med to coarse gravel			
80					Suspect bedrock			
89					Competent rock, suspect bedrock			
91					EOB @ 91'			
					See page 2 notes			

BORING DIAMETER	BORING METHOD	DEPTH
4"	Rollerbit	91'

REMARKS
Field Instrument = NA

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10%
LITTLE 10 TO 20%
SOME 20 TO 35%
AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring Well Completion Report

MW-38

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG

PROJECT: RIDEM - Pascoag

LOCATION: Pascoag, RI

SITE ID: B-11
SHEET 2 **Of** 2
PROJECT NO: 2002467A20

CONTRACTOR: SDR
OPERATOR: Brd
F & O REPRESENTATIVE: GCW
DRILLING METHOD: Drive + wash
SAMPLING METHOD: split spoon
HAMMER WT.: 200 lbs HAMMER FALL (IN): 24
BORING LOCATION: NW portion Cemetery
GROUND ELEVATION: —
DATE STARTED: 7/22/02 DATE FINISHED: ________
SAMPLE PREFIX: – NA –

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME
7/23/02	GS	40'	0815

Time and Date of Completion: ________

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
					Drive 6" casing			
					Cuttings - Sand F-m, little F-c gravel			
6-10					10YR 5/4 mod. yell. brown			
10-20					Sand F-C, Some gravel F-		SW	
20-45					Same, (25-30, long time to advance casing) ~~Same~~ ©			
45	NA	45-47	0.6/2	7 5 9 10	~~Same~~ © collect SS sample, spoon is wet, - Btw.. water table?		SW	ND
					Sand F-M, some c gravel, round			
					~~Same~~ © 10 YR 5/4, wet			
45-50					Same			
50-60					F sand		SP	
~~60-84~~ 60-80					F sand, little gravel		SP	
~~80-84~~ (cw)					Boulders/~~B~~ (cw) +/or Bedrock - not competent			
80-84 ↑					advance to 89'			
					No odors observed during drilling operations			
					c.			

BORING DIAMETER	BORING METHOD	DEPTH
6"	Drive/wash	89 -

REMARKS
Field Instrument = FZ #2
If refusal is encountered, describe all efforts used to confirm:

NW Corner Cemetery

PROPORTIONS USED:
TRACE 0 TO 10%
LITTLE 10 TO 20%
SOME 20 TO 35%
AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ________ To ________
Bentonite Grout/Chips ________ To ________
Concrete/Asphalt ________ To ________
Other ________ ________ To ________

See Monitoring Well Completion Report

MW-40

FUSS & O'NEILL, INC. CONSULTING ENGINEERS MANCHESTER, CT 06040	BORING LOG PROJECT: Pascoag Well Instal LOCATION: Pascoag, RI	SITE ID: B-09 SHEET 1 OF PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad + John
F & O REPRESENTATIVE: BEK
DRILLING METHOD: Rollerbit
SAMPLING METHOD: NA
HAMMER WT.: NA HAMMER FALL (IN): NA
BORING LOCATION: Bradford Court
GROUND ELEVATION: NA
DATE STARTED: 7/19/12 DATE FINISHED: 7/26
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0	NA	NA	NA	NA	Grass, overburden	–	–	NA
4					Suspect bedrock @ 4'	–	–	NA
9					cuttings metamorphic rock N1 to N9 color	–	–	
10					Set casing @ ~~@9'~~ 10'	–	–	
14					4' in ~20 min.			
19					5' in ~28 min			
24					5' in ~17 min			
29					5' in ~26 min possible fracture			
34					5' in ~26 min			
39					5' in ~33 min no odors detected			
42					3' in 8 min cuttings med dark gray N4			
					EOB @ 42'			

BORING DIAMETER	BORING METHOD	DEPTH
4"	Rollerbit	42'

REMARKS
Field Instrument = NA

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10% SOME 20 TO 35%
LITTLE 10 TO 20% AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring We
Completion Repo

MW41

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG

PROJECT: Pascoag Well Instal

LOCATION: Pascoag, RI

SITE ID: B-08
SHEET 1 OF
PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad + Brian
F & O REPRESENTATIVE: BEK
DRILLING METHOD: HSA
SAMPLING METHOD: ~~NA~~ split spoon
HAMMER WT.: 140 HAMMER FALL (IN): ~~NA~~ 24"
BORING LOCATION: N. Main in front of #161
GROUND ELEVATION:
DATE STARTED: 7/18/02 DATE FINISHED:
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0	NA	NA	NA	NA	Asphalt	-	-	NA
5	↓	↓	↓	↓	overburden wet at 8'	-	-	↓
10-12	NA	NA	2/2	2 5 4 5	wet, no odor/some odor from the hole 10 YR 6/2	-	SW	NA
	↓	↓	↓	NA	med. to coarse sand	-	-	↓
13	↓	↓	↓	↓	EOB @ 13'	-	-	↓

BORING DIAMETER	BORING METHOD	DEPTH
2"	HSA	13'

REMARKS
Field Instrument = PID

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10% SOME 20 TO 35%
LITTLE 10 TO 20% AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

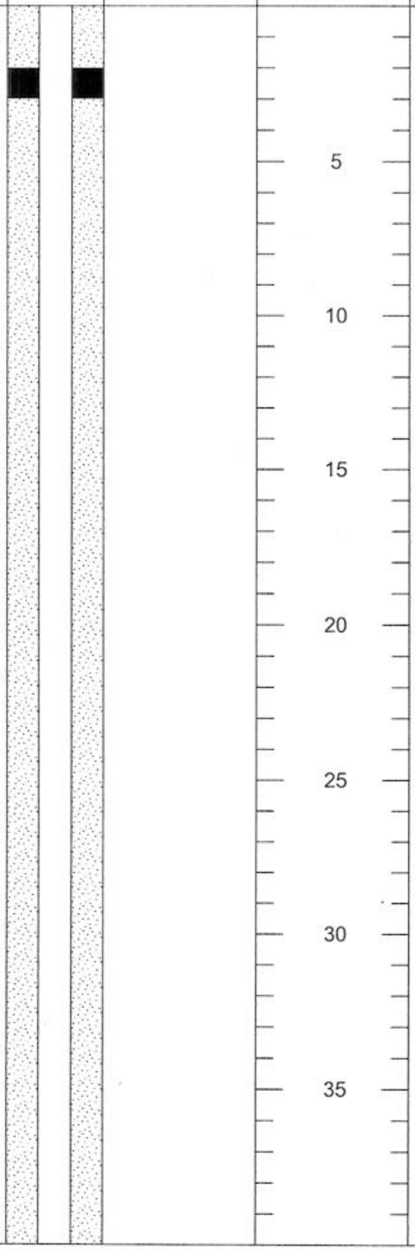
See Monitoring Well Completion Report

F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	10/05/06	Logged By:	
Boring Dia:	3.25" Inches	Boring Number:	MW-41M	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken. 45' TD, 5' screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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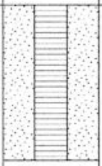
F.I.R.S.T.

FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	10/05/06	Logged By:
Boring Dia:	3.25" Inches	Boring Number:	MW-41M	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				45		
				50		
				55		
				60		
				65		
				70		
				75		



Completion Notes:

No soil samples taken. 45' TD, 5' screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

Project No.: MB M

MW42

FUSS & O'NEILL, INC.
CONSULTING ENGINEERS
MANCHESTER, CT 06040

BORING LOG

PROJECT: Pascoag Well Instal
LOCATION: Pascoag, RI

SITE ID: B-10
SHEET 1 OF 1
PROJECT NO: 2002467A20

DRILLING CO.: Subsurface
DRILLER: Brad + John
F & O REPRESENTATIVE: BEK
DRILLING METHOD: HSA
SAMPLING METHOD: Split spoon
HAMMER WT.: 140 HAMMER FALL (IN): 24
BORING LOCATION: North end of Shea Lane
GROUND ELEVATION: NA
DATE STARTED: 7/19/02 DATE FINISHED: 7/19/02
SAMPLE PREFIX: NA

WATER LEVEL MEASUREMENTS

DATE	MS. PT.	WATER AT	TIME

Time and Date of Completion:

DEPTH (FT)	SAMPLE NO.	SAMPLE DEPTH (FT)	REC/ PEN	BLOWS 6"	SAMPLE DESCRIPTION	STRATA CHANGE	LITHO-LOGIC CODE	FIELD TESTING
0	NA	NA	NA	NA	Asphalt			–
5			↓	BK ~~1 2 4~~ 5 ↓	overburden, dry med sand		SW	–
10					wet at 8'			–
10-12			2/2	1 2 4 5	wet, no odor med sand 5Y 5/2		SW	–
11-12		BK	~~NA~~		wet no odor coarse sand 10YR 6/6		SW	–
13			NA	NA	EOB @ 13'			

BORING DIAMETER	BORING METHOD	DEPTH
2"	HSA	13 ft

REMARKS
Field Instrument = NA

If refusal is encountered, describe all efforts used to confirm:

PROPORTIONS USED:
TRACE 0 TO 10%
LITTLE 10 TO 20%
SOME 20 TO 35%
AND 35 TO 50%

Reviewed by Staff:

BACKFILL
Native Material ______ To ______
Bentonite Grout ______ To ______
Bentonite Chips ______ To ______
Other ______ ______ To ______

See Monitoring W
Completion Rep

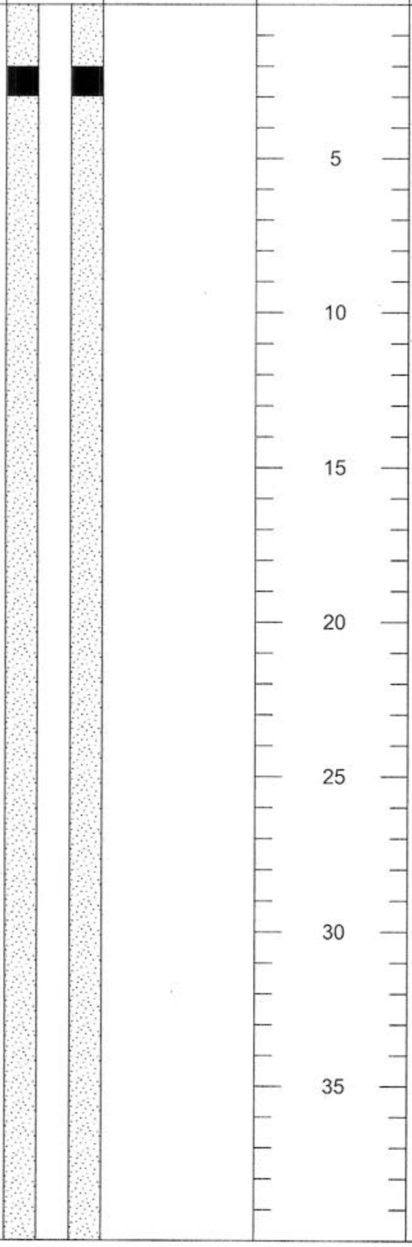
F.I.R.S.T.

FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	9-21-06	Logged By:	
Boring Dia:	3.25 Inches	Boring Number:	MW-42M	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken. Total Depth 45 feet, 5 feet screen

Site:

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24 North Main Street
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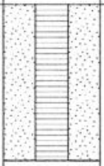
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	9-21-06	Logged By:	
Boring Dia:	3.25 Inches	Boring Number:	MW-42M	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
						
				45		
				50		
				55		
				60		
				65		
				70		
				75		

Completion Notes:

No soil samples taken. Total Depth 45 feet, 5 feet screen

Site:

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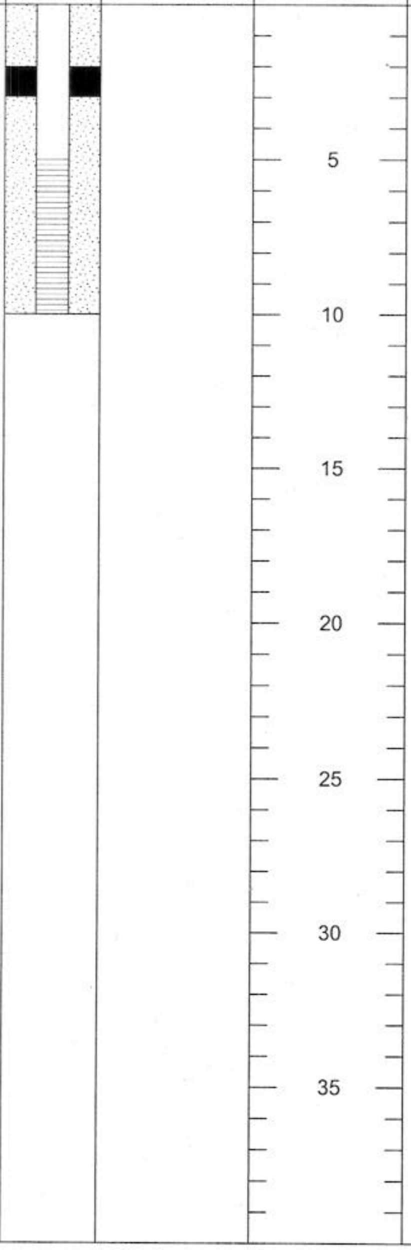
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled:	Logged By:	
Boring Dia: 1.5" Inches	Boring Number: MW-44	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:
10 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
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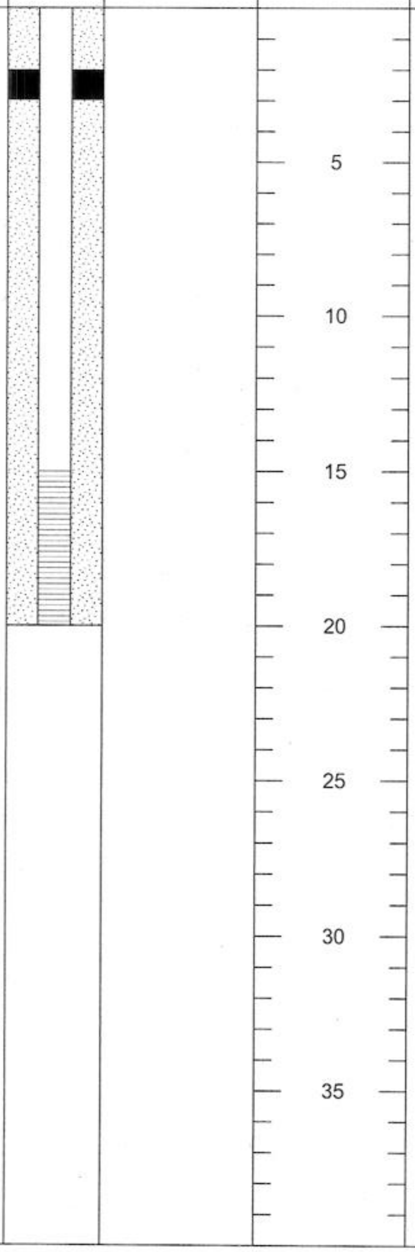
FIELD INVESTIGATION & REMEDIATION SUPPORT TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:		Logged By:
Boring Dia:	1.5" Inches	Boring Number:	MW-45D	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

20 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

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24 North Main Street
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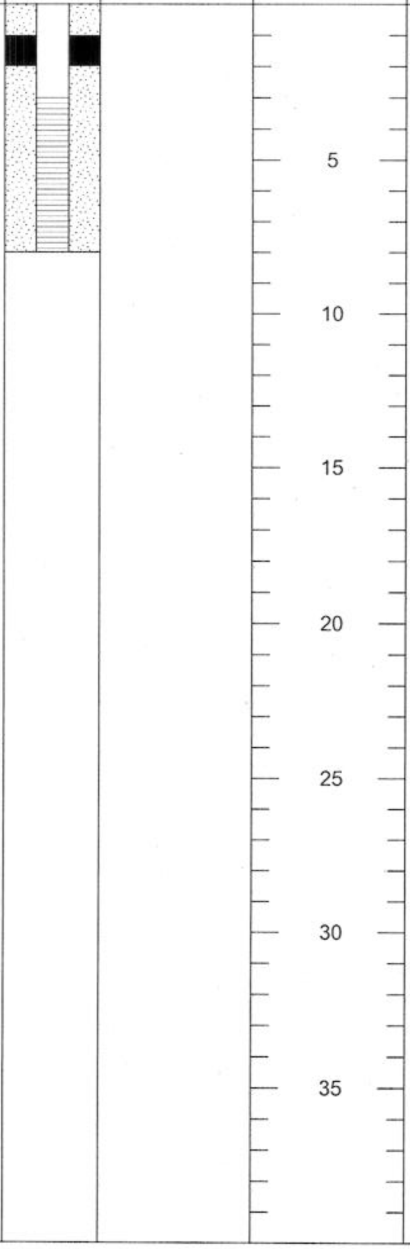
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled:	Logged By:
Boring Dia: 1.5" Inches	Boring Number: MW-45S	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:
8 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

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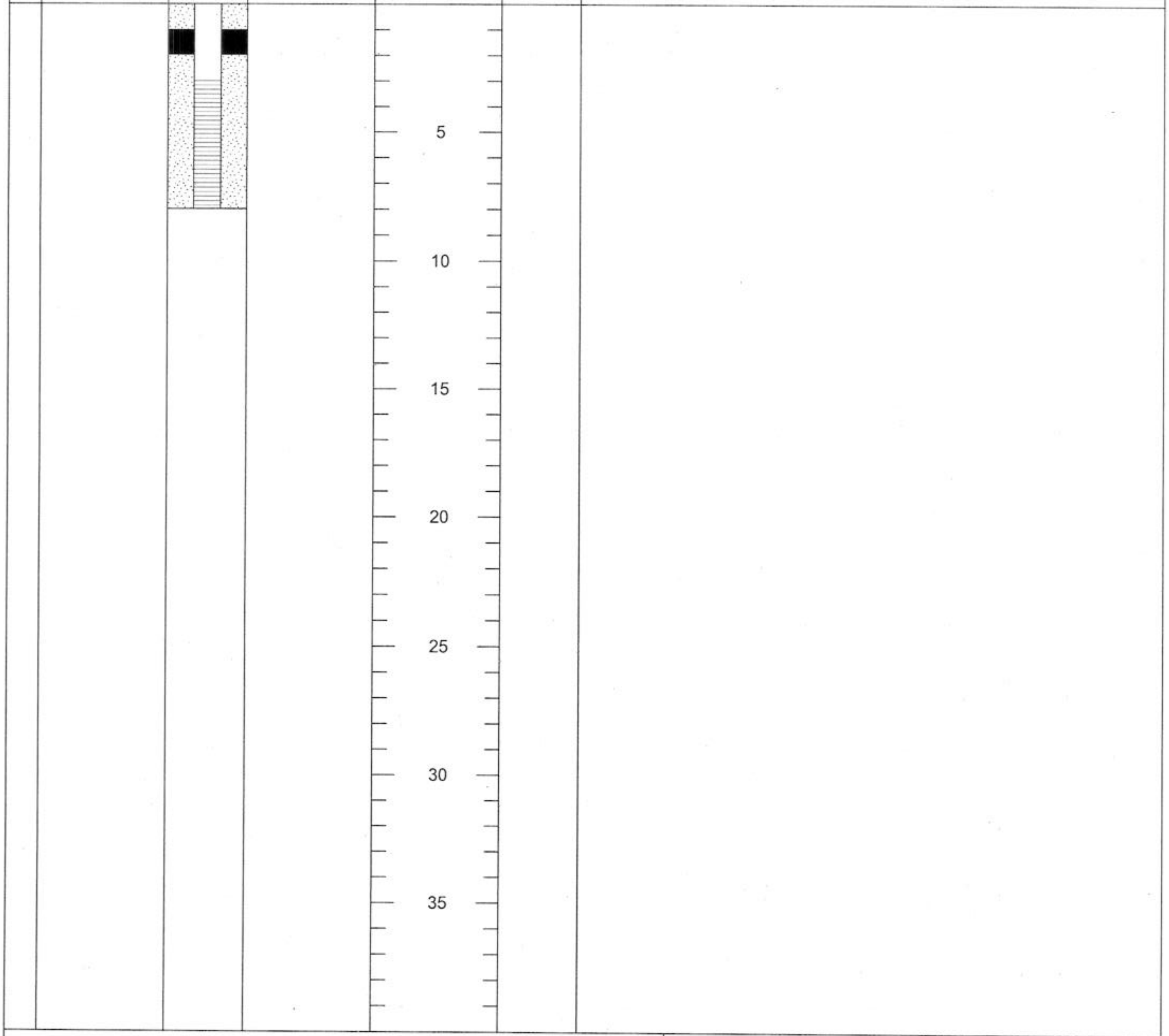
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	8-4-04	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-56	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

8 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

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24 North Main Street
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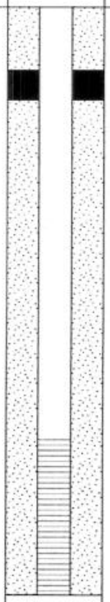
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	8-4-04	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-57	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				5 10 15 20 25 30 35		

Completion Notes:

19 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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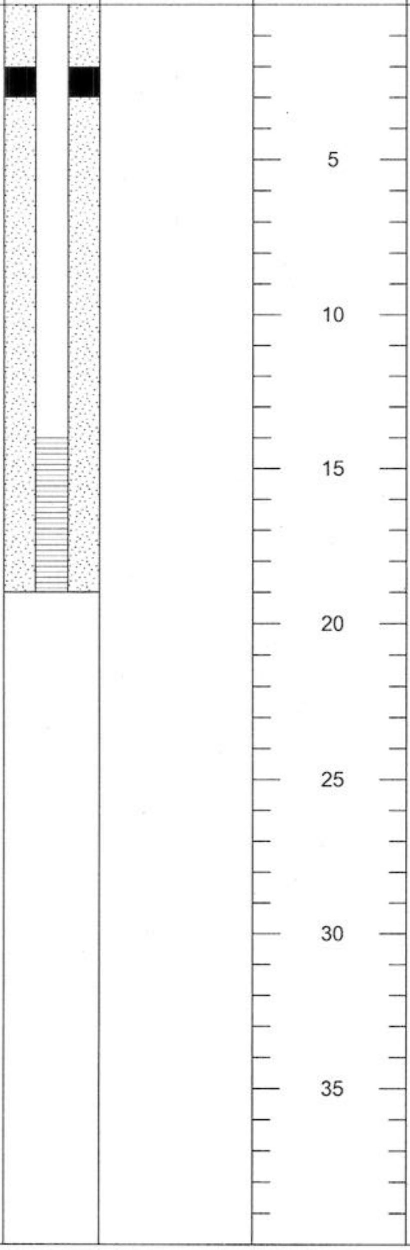
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	8-4-04	Logged By:
Boring Dia:	1.5" Inches	Boring Number:	MW-58D	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

19 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
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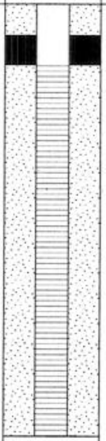
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled: 9/14/06	Logged By:
Boring Dia: 3.25" Inches	Boring Number: MW-58Sr	M. Cote



Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				5		
				10		
				15		
				20		
				25		
				30		
				35		

Completion Notes:

No soil samples taken. 14' TD, 10' screen

Site:

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24 North Main Street
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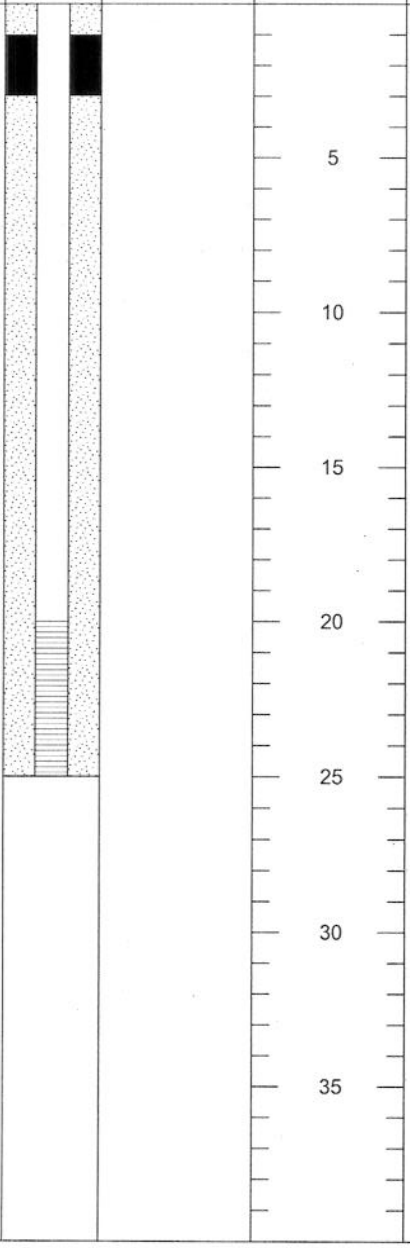
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	9-1-04	Logged By:
Boring Dia:	1.5" Inches	Boring Number:	MW-59D	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

25 feet total depth, 5 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
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F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
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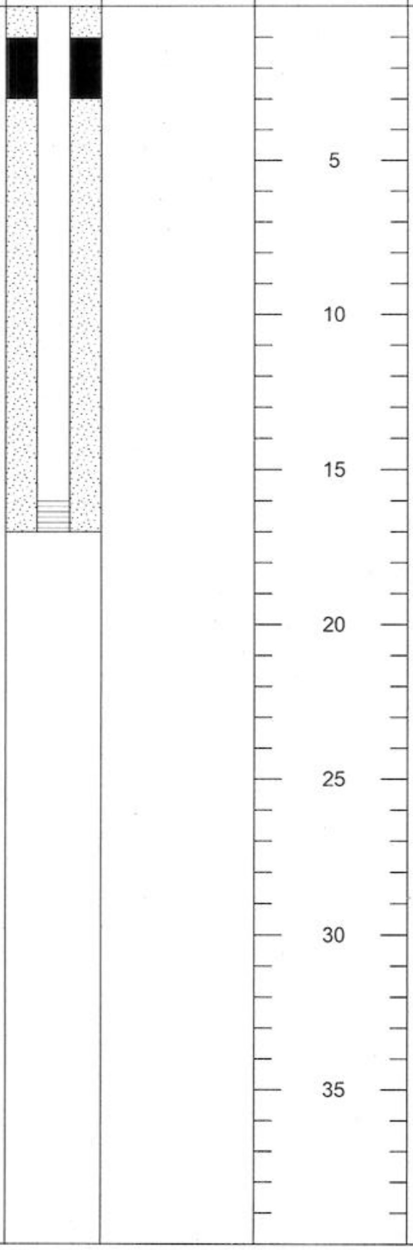
BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	9-1-04	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-59M	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

17 feet total depth, 1 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
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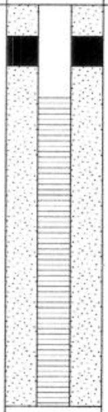
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	9-1-04	Logged By:	
Boring Dia:	1.5" Inches	Boring Number:	MW-59S	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				5 10 15 20 25 30 35		

Completion Notes:

13 feet total depth, 10 feet screen, NO SOIL SAMPLES TAKEN

Site:

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FIELD INVESTIGATION
& REMEDIATION SUPPORT
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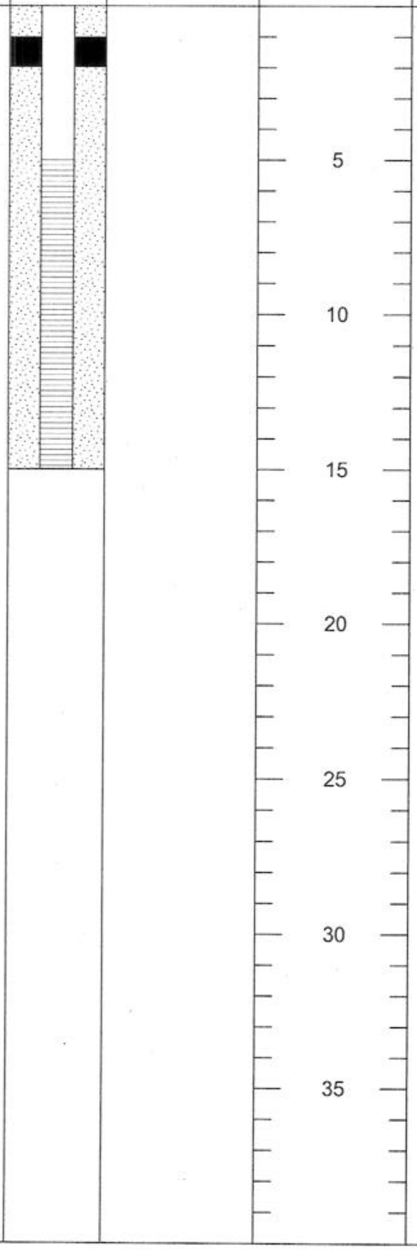
BORING LOG

Drill Rig:	Geoprobe	Date Drilled:		Logged By:
Boring Dia:	1.5" Inches	Boring Number:	MW-60	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

15 feet total depth, 10 feet screen, NO SOIL SAMPLES TAKEN

Site:

Pascoag Mobil
24 North Main Street
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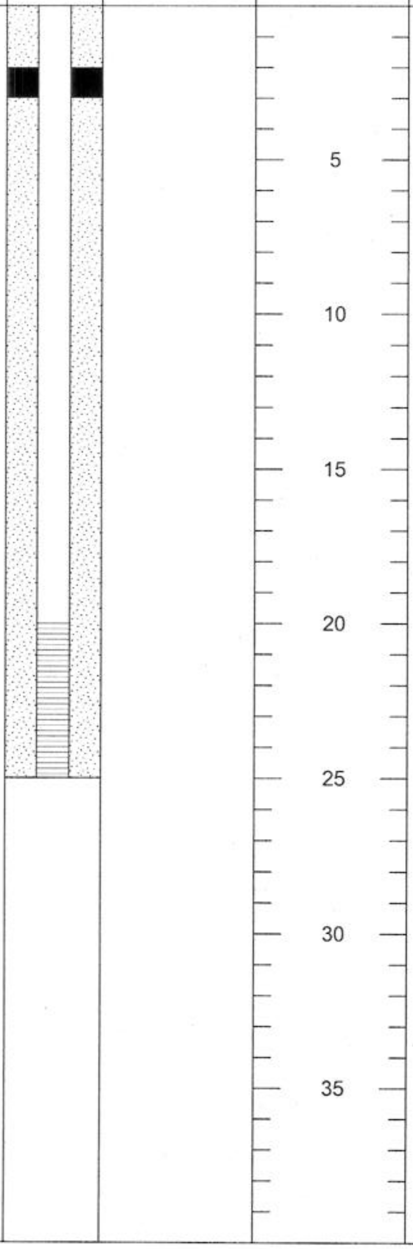
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	9/14/06	Logged By:
Boring Dia:	3.25" Inches	Boring Number:	MW-61M	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken, 25 feet total depth, 5 feet screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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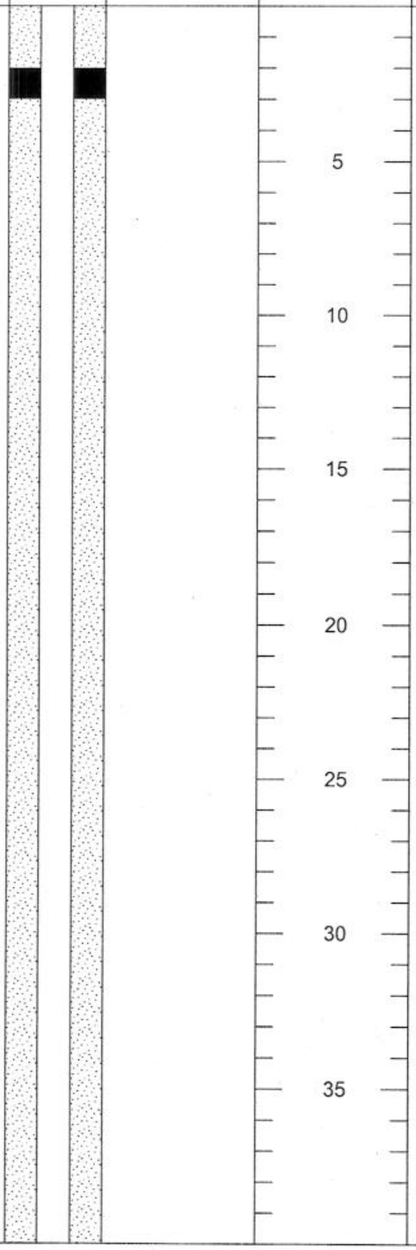
F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled: 9-21-06	Logged By:
Boring Dia: 3.25" Inches	Boring Number: MW-62M	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken. Total Depth 45 feet, 5 feet screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig: Geoprobe	Date Drilled: 9-21-06	Logged By:
Boring Dia: 3.25" Inches	Boring Number: MW-62M	M. Cote

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				45		
				50		
				55		
				60		
				65		
				70		
				75		

Completion Notes:

No soil samples taken. Total Depth 45 feet, 5 feet screen

Site:

Pascoag Mobil
24 North Main Street
Burrillville,

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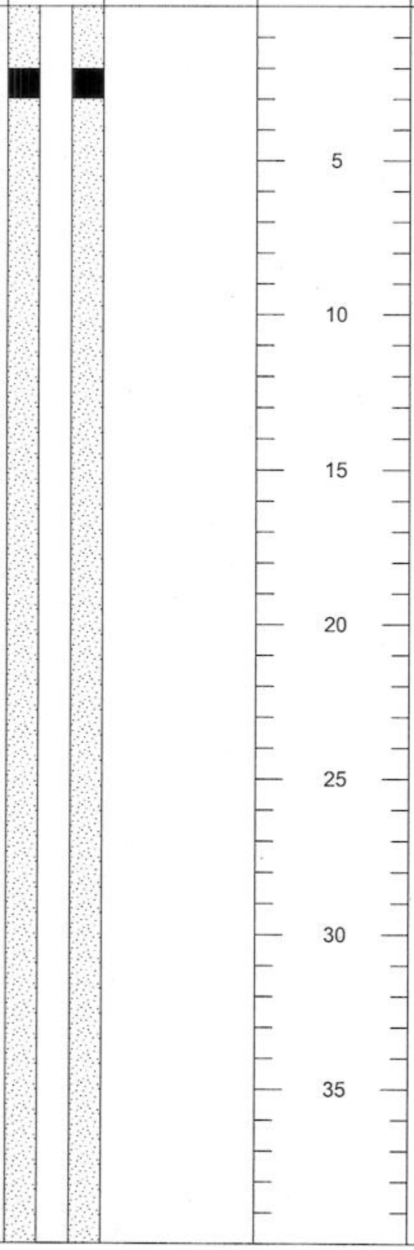
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	10-19-06	Logged By:	
Boring Dia:	3.25" Inches	Boring Number:	MW-64M	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description



Completion Notes:

No soil samples taken. Total Depth 45 feet, 5 feet screen

Site:

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24 North Main Street
Burrillville,

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& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	Geoprobe	Date Drilled:	10-19-06	Logged By:	
Boring Dia:	3.25" Inches	Boring Number:	MW-64M	M. Cote	

Recovery	Blow Counts	Completion	PID (ppm)	Depth Feet	Lithology	Description
				45		
				50		
				55		
				60		
				65		
				70		
				75		

Completion Notes:

No soil samples taken. Total Depth 45 feet, 5 feet screen

Site:

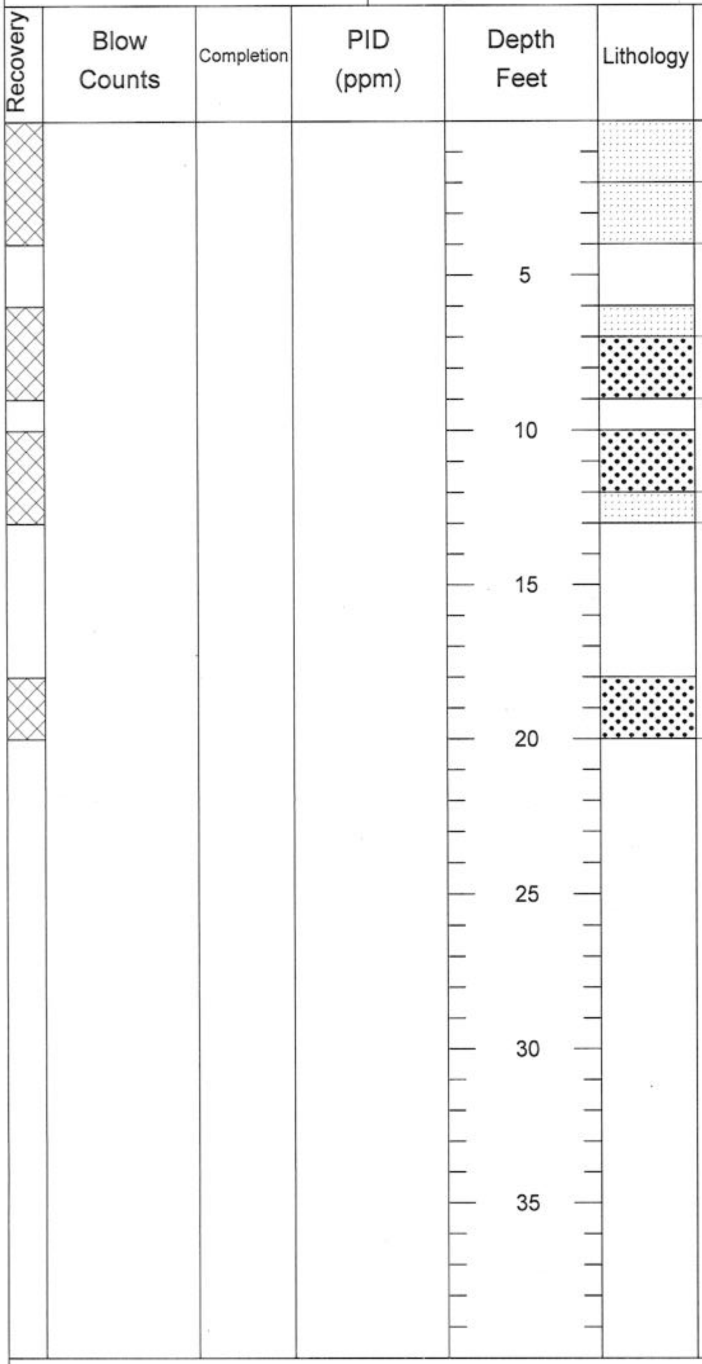
Pascoag Mobil
24 North Main Street
Burrillville,

Project No.:	0329	Page	2

F.I.R.S.T.
FIELD INVESTIGATION
& REMEDIATION SUPPORT
TEAM

BORING LOG

Drill Rig:	GEOPROBE	Date Drilled:	6/15/06	Logged By:	
Boring Dia:	Inches	Boring Number:	M05-03	M COTE	



Description

Loose, Black, FINE SAND AND ORGANIC, dry, non-plastic, non-cohesive

Loose, Tan, MEDIUM SAND with red mottling, wet, non-plastic, non-cohesive, trace coarse sand and broken rock

Loose, Tan, MEDIUM SAND with red mottling, wet, non-plastic, non-cohesive, trace coarse sand and broken rock

Loose, Tan, MEDIUM SAND , wet, non-plastic, non-cohesive, trace coarse sand and broken rock

Very loose, Tan, MEDIUM SAND , wet, non-plastic, non-cohesive, trace

Loose, Gray, MEDIUM SAND , wet, non-plastic, non-cohesive, little coarse sand and broken rock

Loose, Tan, COARSE SAND , wet, non-plastic, non-cohesive, little fine gravel

Completion Notes:

SOIL BORING ONLY, DIFFICULT SAMPLE COLLECTION, SWITCHED FROM DUAL TUBE TO CLOSED MACRO CORE AT 15 FEET. HALTED SAMPLE COLLECTION AFTER 20 FEET, NO REFUSAL.

Site:

PASCOAG MOBIL
24 NORTH MAIN STREET
PASCOAG,

Project No.: LS 0329

Appendix I: Area Wide Sampling Data

I.1. Groundwater Elevations

I.2. Groundwater Sampling Tables

I.1. Groundwater Elevations

PASCOAG MAIN STREET MOBIL
2005-2012 WELL GAUGING DATA
AREA 1

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
AE-11 BR	5/31/2005	396.41	9.35	387.06
	6/5/2006	396.41	10.08	386.33
	5/3/2012	396.41	9.65	386.76
	8/9/2012	396.41	10.64	385.77
	11/29/2012	396.41	10.2	386.21
AE-6 BR	5/31/2005	397.43	9.28	388.15
	6/5/2006	397.43	10.46	386.97
	5/3/2012	397.43	9.61	387.82
LE-10	5/3/2012	396.60	Dry	--
	8/9/2012	396.60	Dry	--
	11/29/2012	396.60	Dry	--
MW-70D	5/3/2012	395.73	17.07	378.66
	8/9/2012	395.73	17.9	377.83
	11/29/2012	395.73	17.7	378.03
MW-70BR	5/3/2012	398.88	20.33	378.55
	8/9/2012	398.88	21.05	377.83
	11/29/2012	398.88	20.95	377.93
MW-71BR	5/3/2012	397.02	8.88	388.14
	8/9/2012	397.02	9.12	387.9
	11/29/2012	397.02	9.4	387.62
MW-71D	5/3/2012	397.05	9.14	387.91
	8/9/2012	397.05	9.95	387.1
	11/29/2012	397.05	9.7	387.35

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA

AREA 2

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
LE-16	5/31/2005	387.87	23.76	364.11
	6/20/2006	387.87	22.77	365.1
	1/10/2012	387.87	22.9	364.97
	5/2/2012	387.87	23.9	363.97
	8/13/2012	387.87	25.1	362.77
	12/3/2012	387.87	25.12	362.75
LE-6 BR	5/31/2005	392.34	10.66	381.68
	6/5/2006	392.34	10.41	381.93
	1/10/2012	392.34	10.54	381.8
	5/2/2012	392.34	10.55	381.79
	8/14/2012	392.34	10.65	381.69
	12/3/2012	392.34	10.86	381.48
LE-7BR	6/5/2006	387.31	15.05	372.26
	5/3/2012	387.31	17.72	369.59
	8/13/2012	387.31	18.75	368.56
	12/3/2012	387.31	18.88	368.43
MW-34BR	6/20/2006	384.16	12.31	371.85
	1/10/2012	384.16	13.86	370.3
	5/3/2012	384.16	13.66	370.5
	8/13/2012	384.16	15.2	368.96
	12/3/2012	384.16	14.9	369.26

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA

AREA 3

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
LE-1	5/31/2005	369.78	7.51	362.27
	6/5/2006	369.78	6.68	363.1
	1/16/2012	369.78	6.77	363.01
	5/2/2012	369.78	7.35	362.43
	8/10/2012	369.78	7.1	362.68
	11/30/2012	369.78	8.6	361.18
LE-2	5/31/2005	369.72	6.79	362.93
	6/5/2006	369.72	6.19	363.53
	10/24/2006	369.72	7.65	362.07
	1/16/2012	369.72	5.98	363.74
	5/2/2012	369.72	7.05	362.67
	8/10/2012	369.72	8	361.72
LE-3D	5/31/2005	372.63	10.18	362.45
	1/16/2012	372.63	9.38	363.25
	5/1/2012	372.63	10.15	362.48
	8/10/2012	372.63	11.22	361.41
LE-3I	5/31/2005	372.52	10.07	362.45
	6/5/2006	372.52	9.24	363.28
	10/24/2006	372.52	11.9	360.62
	1/16/2012	372.52	9.28	363.24
	5/1/2012	372.52	10.05	362.47
	11/30/2012	372.52	10.96	361.56
LE-15M	5/31/2005	372.04	8.01	364.03
	6/5/2006	372.04	7.04	365
	5/2/2012	372.04	8.15	363.89
	8/13/2012	372.04	9.28	362.76
	12/3/2012	372.04	9.42	362.62
LE-15D	5/31/2005	371.47	8.12	363.35
	6/5/2006	371.47	8.24	363.23
	1/10/2012	371.47	6.63	364.84
	5/2/2012	371.47	7.37	364.10
	8/13/2012	371.47	8.5	362.97
	12/3/2012	371.47	8.48	362.99
MW-14D	5/31/2005	376.71	13.75	362.96
	6/5/2006	376.71	12.96	363.75
	1/10/2012	376.71	13.05	363.66
	5/1/2012	376.71	13.75	362.96
	8/10/2012	376.71	14.75	361.96
	11/30/2012	376.71	14.62	362.09
MW-14M	5/31/2005	376.51	13.59	362.92
	6/5/2006	376.51	12.76	363.75
	1/10/2012	376.51	13.24	363.27
	5/1/2012	376.51	14.05	362.46
	8/10/2012	376.51	15.00	361.51
MW-20D	5/31/2005	375.73	12.28	363.45
	6/5/2006	375.73	11.33	364.4
	1/16/2012	375.73	11.5	364.23
	5/1/2012	375.73	12.35	363.38
	8/13/2012	375.73	13.5	362.23
	12/3/2012	375.73	13.55	362.18

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA

AREA 3

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
MW-20S	5/31/2005	375.26	11.95	363.31
	6/5/2006	375.26	11.04	364.22
	1/16/2012	375.26	11.04	364.22
	5/1/2012	375.26	11.95	363.31
	8/13/2012	375.26	Dry	--
	12/3/2012	375.26	Dry	--
MW-21S	5/31/2005	372.33	10.11	362.22
	6/5/2006	372.33	9.21	363.12
	1/9/2012	372.33	9.4	362.93
	5/1/2012	372.33	9.89	362.44
	8/10/2012	372.33	10.9	361.43
	11/30/2012	372.33	10.51	361.82
MW-21D	5/31/2005	372.60	9.63	362.97
	6/5/2006	372.60	8.73	363.87
	1/9/2012	372.60	8.54	364.06
	5/1/2012	372.60	9.53	363.07
	8/10/2012	372.60	10.47	362.13
	11/30/2012	372.60	10.1	362.5
MW-22	5/31/2005	369.16	6.07	363.09
	6/5/2006	369.16	5.08	364.08
	1/9/2012	369.16	5.9	363.26
	5/1/2012	369.16	5.75	363.41
	8/13/2012	369.16	6.75	362.41
	12/3/2012	369.16	6.75	362.41
MW-31S	5/31/2005	371.97	10.09	361.88
	6/5/2006	371.97	9.17	362.8
	1/16/2012	371.97	9.47	362.5
	5/1/2012	371.97	10.12	361.85
	8/10/2012	371.97	10.95	361.02
	11/30/2012	371.97	10.5	361.47
MW-31D	5/31/2005	371.58	9.88	361.7
	6/5/2006	371.58	9.03	362.55
	1/16/2012	371.58	9.25	362.33
	5/1/2012	371.58	9.85	361.73
	8/10/2012	371.58	10.8	360.78
	11/30/2012	371.58	10.45	361.13
MW-33BR	5/31/2005	371.99	8.95	363.04
	6/5/2006	371.99	8.17	363.82
	1/9/2012	371.99	8.36	363.63
	5/2/2012	371.99	8.65	363.34
	8/13/2012	371.99	9.65	362.34
	12/3/2012	371.99	9.52	362.47

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA
AREA 4

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
MW-17BR	5/3/2012	369.63	4.48	365.15
	8/9/2012	369.63	4.47	365.16
	11/29/2012	369.63	4.72	364.91
MW-18S	5/31/2005	366.18	3.37	362.81
	6/5/2006	366.18	2.89	363.29
	1/9/2012	366.18	3.71	362.47
	4/30/2012	366.18	3.06	363.12
	8/9/2012	366.18	3.86	362.32
	11/29/2012	366.18	3.28	362.9
MW-18D	5/31/2005	365.84	4.03	361.81
	4/30/2012	365.84	2.91	362.93
	11/29/2012	365.84	3.11	362.73
MW-28S	5/31/2005	368.39	6.22	362.17
	1/9/2012	368.39	6.08	362.31
	4/30/2012	368.39	5.38	363.01
	8/9/2012	368.39	6.45	361.94
	11/29/2012	368.39	5.85	362.54
MW-28D	5/31/2005	368.28	5.69	362.59
	6/5/2006	368.28	5.2	363.08
	10/19/2006	368.28	6.84	361.44
	4/30/2012	368.28	5.21	363.07
	8/9/2012	368.28	6.20	362.08
	11/29/2012	368.28	5.60	362.68
MW-28BR	6/5/2006	367.36	5.2	362.16
	1/9/2012	367.36	6.45	360.91
	4/30/2012	367.36	5.63	361.73
MW-29	5/31/2005	369.28	4.35	364.93
	6/5/2006	369.28	3.57	365.71
MW-30S	10/19/2006	369.28	5.02	364.26
	10/19/2006	367.53	6.18	361.35
	1/10/2012	367.53	13.05	354.48
	5/1/2012	367.53	5.25	362.28
	5/2/2012	367.53	7.55	359.98
	11/30/2012	367.53	5.48	362.05
MW-30D	5/31/2005	368.17	5.62	362.55
	6/5/2006	368.17	4.8	363.37
	1/9/2012	368.17	5.22	362.95
	5/1/2012	368.17	5.25	362.92
	8/9/2012	368.17	6.22	361.95
	11/30/2012	368.17	5.94	362.23
MW-32S	5/31/2005	366.94	5.16	361.78
	6/5/2006	366.94	4.59	362.35
	10/24/2006	366.94	5.7	361.24
	1/13/2012	366.94	4.47	362.47
	5/2/2012	366.94	4.78	362.16
	8/13/2012	366.94	5.4	361.54
	11/29/2012	366.94	5.24	361.7

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA
AREA 4

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
MW-32D	5/31/2005	366.11	6.94	359.17
	6/5/2006	366.11	4.71	361.4
	10/24/2006	366.11	5.78	360.33
	1/13/2012	366.11	4.8	361.31
	5/2/2012	366.11	5.12	360.99
	8/13/2012	366.11	5.8	360.31
	11/29/2012	366.11	5.6	360.51
MW-41S	6/23/2006	367.70		367.7
	1/13/2012	367.70	4.44	363.26
	5/1/2012	367.70	5.75	361.95
	8/10/2012	367.70	6.58	361.12
	11/30/2012	367.70	6.35	361.35
MW-41M	10/24/2006	368.07	6.9	361.17
	1/13/2012	368.07	5.72	362.35
	5/2/2012	368.07	6.15	361.92
	8/10/2012	368.07	6.98	361.09
	11/30/2012	368.07	6.71	361.36
MW-42S	5/31/2005	367.30	6.16	361.14
	6/5/2006	367.30	5.48	361.82
	10/24/2006	367.30	6.35	360.95
	1/13/2012	367.30	5.97	361.33
	5/2/2012	367.30	6.2	361.1
	8/10/2012	367.30	6.65	360.65
	11/30/2012	367.30	6.61	360.69
MW-42M	10/24/2006	367.04	6.24	360.8
	1/13/2012	367.04	5.58	361.46
	5/1/2012	367.04	5.95	361.09
	8/10/2012	367.04	6.55	360.49
	11/30/2012	367.04	6.3	360.74
MW-42D	5/31/2005	366.97	5.79	361.18
	6/5/2006	366.97	5.11	361.86
	10/24/2006	366.97	6.2	360.77
	1/13/2012	366.97	5.52	361.45
	5/1/2012	366.97	5.85	361.12
	8/10/2012	366.97	6.46	360.51
	11/30/2012	366.97	6.25	360.72
MW-44	5/31/2005	369.18	3.67	365.51
	6/5/2006	369.18	3.34	365.84
	10/19/2006	369.18	5.5	363.68
	1/9/2012	369.18	6.15	363.03
	4/30/2012	369.18	6.4	362.78
	8/14/2012	369.18	2.9	366.28
	11/29/2012	369.18	4.8	364.38
MW-45S	5/31/2005	365.86	3.77	362.09
	6/5/2006	365.86	3.43	362.43
	10/19/2006	365.86	4.63	361.23
	1/9/2012	365.86	3.8	362.06
	4/30/2012	365.86	2.9	362.96
	8/10/2012	365.86	3.76	362.1
	11/30/2012	365.86	3.32	362.54

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA
AREA 4

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
MW-45D	5/31/2005	365.90	3.82	362.08
	6/5/2006	365.90	3.41	362.49
	10/19/2006	365.90	4.65	361.25
	1/9/2012	365.90	3.78	362.12
	4/30/2012	365.90	3	362.9
	8/10/2012	365.90	3.74	362.16
	11/30/2012	365.90	3.51	362.39
MW-46R	1/9/2012	--	1.2	--
	12/3/2012	--	2.48	--
MW-47R	1/9/2012	--	0.5	--
MW-49R	1/9/2012	--	2.05	--
MW-50R	1/9/2012	--	2.75	--
MW-51R	1/13/2012	--	2.5	--
MW-55	1/9/2012	--	1.98	--
MW-56	5/31/2005	370.6	3.56	367.04
	6/5/2006	370.6	2.61	367.99
	10/19/2006	370.6	5.19	365.41
	5/4/2012	370.6	3.57	367.03
	8/9/2012	370.6	4.85	365.75
	11/29/2012	370.6	4.45	366.15
MW-58S	5/31/2005	372.17	7.26	364.91
	10/19/2006	372.17	10.58	361.59
	1/9/2012	372.17	9.75	362.42
	5/4/2012	372.17	8.85	363.32
	8/9/2012	372.17	10.51	361.66
	11/29/2012	372.17	9.5	362.67
MW-58D	5/31/2005	370.07	7.49	362.58
	10/19/2006	370.07	8.65	361.42
	1/9/2012	370.07	8.11	361.96
	5/4/2012	370.07	8.05	362.02
	8/9/2012	370.07	8.58	361.49
	11/29/2012	370.07	7.85	362.22
MW-58BR	5/3/2012	373.03	10	363.03
	8/9/2012	373.03	33.5	339.53
MW-59S	6/5/2006	365.96	3.24	362.72
	1/9/2012	365.96	3.71	362.25
MW-59M	6/5/2006	369.07	3.3	365.77
MW-59D	6/5/2006	366.01	2.98	363.03
	1/9/2012	366.01	3.5	362.51
MW-59BR	5/3/2012	365.47	2.05	363.42
	8/9/2012	365.47	9.3	356.17
	11/29/2012	365.47	7.19	358.28
MW-59S-New	5/3/2012	365.91	2.93	362.98
	8/9/2012	365.91	3.95	361.96
	11/29/2012	365.91	3.53	362.38
MW-59M-New	5/3/2012	365.85	2.85	363
	8/9/2012	365.85	3.88	361.97
	11/29/2012	365.85	3.42	362.43
MW-59D-New	5/3/2012	365.84	2.85	362.99
	8/9/2012	365.84	3.85	361.99
	11/29/2012	365.84	4.4	361.44
MW-60	7/21/2006	379.13	--	--

PASCOAG MAIN STREET MOBIL

2005-2012 WELL GAUGING DATA
AREA 4

LOCATION	DATE	TOC ELEV.	WATER TABLE	CORRECTED WATER TABLE
MW-61M	10/19/2006	365.52	4.28	361.24
	1/9/2012	365.52	3.47	362.05
	5/1/2012	365.52	3.12	362.4
	8/10/2012	365.52	3.9	361.62
	11/30/2012	365.52	3.57	361.95
MW-62M	10/24/2006	367.57	6.5	361.07
	1/13/2012	367.57	5.64	361.93
	5/1/2012	367.57	5.9	361.67
	8/10/2012	367.57	6.6	360.97
	12/3/2012	367.57	8.32	359.25
MW-63R	1/13/2012	--	1.16	--
MW-64M	10/24/2006	373.25	5.95	367.3
BETA-1	8/9/2012	370.13	20.70	349.43
BETA-2	8/9/2012	368.6	21.90	346.7

I.2. Area Wide Groundwater Sampling Tables

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS
AREA 1

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
AE-11 BR	6/6/2005	540		110	B	420		97		39			
	6/21/2006	160		30		170		42		24			
	5/3/2012	1	U	1	U	1	U	2	U	8.3			
	8/9/2012	1	U	1	U	1	U	2	U	14			
	11/29/2012	1	U	1	U	1	U	2	U	8.8			
AE-6 BR	6/6/2005	1.3	J	32		370		74		31			
	6/21/2006	1	U	2.2		100		28		3			
	5/3/2012	2	U	2	U	9.4		4	U	9.1			
	8/10/2012	1	U	1	U	4		2	U	7.8			
	11/29/2012	1	U	1	U	1.2		2	U	7.2			
MW-70BR	5/3/2012	5.3		7.8		97		31		1.4			
	8/9/2012	5.7		5		150		35		3.4			
	11/29/2012	1.9		1.1		26		14		2.8			
MW-70D	5/3/2012	5		4.1		53		32		1			
	8/9/2012	10		10		240		59		4	U		
	11/29/2012	5	U	5	U	70		23		5	U		
MW-71BR	5/3/2012	1	U	1	U	1	U	2	U	1	U		
	8/9/2012	1	U	1	U	1	U	2	U	1	U		
	11/29/2012	1	U	1	U	1	U	2	U	1	U		
MW-71D	5/3/2012	1	U	1	U	1	U	2	U	1	U		
	8/9/2012	1	U	1	U	1	U	2	U	1	U		
	11/29/2012	1.3		1	U	1	U	2	U	1.4			

U: compound analyzed for but not detected

J: estimated value (above detection limit)

B: compound also found in Method Blank

MTBE: Methyl Tertiary-butyl ether

ppb: parts per billion

shaded values: above standards

Additional contaminants were detected in various wells, but were not reported above RI groundwater quality standards. Refer to laboratory analytical reports for additional information.

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS
AREA 2

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments
GA Groundwater Objective	--	5		1000		700		100		40		
LE-16	6/1/2005	910		13,000		2,100		610		2,600		
	6/20/2006	210		3,400		1,100		370		480		
	8/12/2010	74		2,200		810		79		490		
	9/1/2011	1.5		45		30		4.1		5.6		
	1/10/2012	1.2		31		21		10	U	5		
	5/2/2012	12		410		250		27		50		
	8/13/2012	37		1,700		790		140		210		
	12/3/2012	58		1,700		1,100		110		220		
LE-6 BR	6/1/2005	10	U	4.3	J	3.2	J	10	U	1,100		
	6/3/2005	0.62	J	1.4		1.4		6.2		39		
	8/26/2005	7.2		6	U	10		6	U	650		
	6/6/2006	0.58	J	1	U	1	U	1	U	92		
	8/18/2010	1	U	1	U	1	U	2	U	170		
	1/13/2012	1	U	1	U	1	U	10	U	1.2		
	5/2/2012	1	U	1	U	1	U	5	U	3.9		
	8/14/2012	1	U	1	U	1	U	2	U	50		
	12/3/2012	1	U	1	U	1	U	2	U	16		
LE-7	8/30/2011	1	U	1	U	1	U	2	U	1		
	6/1/2005	0.22	J	2.3		1.7		1	U	2.6		
	8/26/2005	9.4		130		100		18		160		
	6/6/2006	1	U	0.47	J	0.33	J	1	U	2.2		
	1/13/2012	1	U	1	U	1	U	10	U	1	U	
	5/3/2012	1	U	1	U	1	U	2	U	1	U	
	8/13/2012	1	U	3.3		20		4.9		4.2		
	12/3/2012	1	U	4.4		14		4		3.3		
MW-34BR	6/6/2005	440		1,300		420		200		980		
	6/20/2006	170		600		360		190		270		
	1/9/2012	1.1		2		7.4		23		20		Visible sheen
	5/3/2012	1	U	8		9.7		20		11		Visible sheen
	8/13/2012	2.3		24		11		54		35		Visible sheen
	12/3/2012	5	U	9.4		23		24		38		Odor

U: compound analyzed for but not detected
J: estimated value (above detection limit)
B: compound also found in Method Blank

MTBE: Methyl Tertiary-butyl ether
ppb: parts per billion
shaded values: above standards

Additional contaminants were detected in various wells, but were not reported above RI groundwater quality standards. Refer to laboratory analytical reports for additional information.

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 3

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
LE-1	6/8/2005	1	U	1	U	1	U	1	U	1	U		
	6/23/2006	1	U	1	U	1	U	1	U	1	U		
	8/4/2010	1	U	1	U	1	U	2	U	1	U		
	8/30/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
LE-15D	6/2/2005	10	U	4.8	J	10	U	10	U	1,200			
	8/26/2005	10	U	10	U	10	U	10	U	930			
	6/22/2006	10	U	10	U	10	U	10	U	780			
	1/9/2012	1	U	1	U	1	U	10	U	340			
	5/2/2012	5	U	5	U	5	U	25	U	440			
	8/13/2012	5	U	5	U	5	U	10	U	440			
	12/3/2012	10	U	10	U	10	U	20	U	970			
LE-15M	6/2/2005	28		76		52		24		310			
	8/26/2005	1	U	1	U	1	U	1	U	4.6			
	6/22/2006	4.4		17		35		12		31			
	1/10/2012	1	U	1	U	1	U	10	U	2.8			
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/13/2012	1	U	1	U	1	U	2	U	1.4			
	12/3/2012	1	U	1	U	1	U	2	U	1	U		
LE-15S	6/2/2005	1	U	1	U	1	U	1	U	3.1			
	8/26/2005	1	U	1	U	1	U	1	U	1.9			
	6/22/2006	1	U	1	U	1	U	1	U	3.1			
	1/10/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/13/2012	1	U	1	U	1	U	2	U	1	U		
	12/3/2012	1	U	1	U	1	U	2	U	1	U		
LE-2	4/29/2005	100		1,700		210		110		240			
	6/8/2005	12		180		18		36		36			
	6/8/2005	55		660		33		8.1		210			
	6/23/2006	1	U	1	U	1	U	1	U	0.73	J		
	10/24/2006	1	U	1	U	1	U	1	U	1	U		
	8/4/2010	1	U	1	U	1	U	2	U	1	U		
	9/1/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 3

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
LE-3D	6/8/2005	20	U	20	U	20	U	20	U	2,900			
	6/23/2006	1	U	1	U	1	U	1	U	7.7			
	10/24/2006	1	U	1	U	1	U	1	U	49			
	7/22/2010	1	U	1	U	1	U	2	U	2.6			
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1.5			
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
LE-3I	6/8/2005	20	U	20	U	20	U	20	U	2,800			
	6/23/2006	1	U	1	U	1	U	1	U	45			
	10/24/2006	6	U	6	U	6	U	6	U	1,200			
	7/22/2010	1	U	1	U	1	U	2	U	13			
	8/24/2011	1	U	1	U	1	U	2	U	6.2			
	1/16/2012	1	U	1	U	1	U	10	U	1.4			
	5/1/2012	1	U	1	U	1	U	5	U	1.5			
	8/10/2012	1	U	1	U	1	U	2	U	1			
	11/30/2012	1	U	1	U	1	U	2	U	11			
MW-14D	3/25/2005	1	U	1	U	1	U	1	U	0.26	J		
	6/3/2005	1	U	1	U	1	U	1	U	0.5	J		
	8/26/2005	1	U	1	U	1	U	1	U	0.27	J		
	6/20/2006	1	U	1	U	1	U	1	U	0.33	J		
	8/5/2010	1	U	1	U	1	U	2	U	1	U		
	1/10/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-14M	4/29/2005	8	U	8	U	8	U	8	U	860			
	5/11/2005	8	U	9.5		2.4	J	3.4	J	870			
	6/3/2005	2	U	2	U	2	U	2	U	210			
	8/26/2005	2	U	2	U	2	U	2	U	230			
	6/23/2006	1	U	1	U	1	U	1	U	5.3			
	8/5/2010	1	U	1	U	1	U	2	U	1	U		
	9/1/2011	1	U	2.5		5.9		2	U	9.1			
	1/10/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		

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2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 3

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-20D	12/22/2005	1	U	1	U	1	U	1	U	0.42	J		
	2/18/2005	1	U	1	U	1	U	1	U	8.1			
	6/8/2005	1	U	1	U	1	U	1	U	3.7			
	8/24/2005	1	U	1	U	1	U	1	U	1	J		
	6/26/2006	1	U	1	U	1	U	1	U	0.68	J		
	8/4/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/13/2012	1	U	1	U	1	U	2	U	1	U		
	12/3/2012	1	U	1	U	1	U	2	U	1	U		
MW-20S	12/22/2005	1	U	1	U	1	U	1	U	0.31	J		
	2/18/2005	1	U	1	U	0.32	J	1	U	1	U		
	6/8/2005	1	U	1	U	1	U	1	U	0.52	J		
	8/24/2005	1	U	1	U	1	U	1	U	0.73	J		
	6/26/2006	1	U	1	U	1	U	1	U	1	U		
	8/4/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1	U		
MW-21D	12/22/2005	1	U	1	U	1	U	1	U	530			
	3/25/2005	1	U	1	U	1	U	1	U	1	U		
	4/29/2005	1	U	1	U	1	U	1	U	1.3			
	5/11/2005	1	U	1	U	1	U	1	U	10			
	6/8/2005	10	U	10	U	10	U	10	U	910			
	8/24/2005	1	U	1	U	1	U	1	U	170			
	6/22/2006	5	U	5	U	5	U	5	U	480			
	7/20/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	5	U	1	U		
	1/9/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	2			
	8/10/2012	1	U	1	U	1	U	2	U	4.5			
	11/30/2012	1	U	1	U	1	U	2	U	11			
MW-21S	12/22/2005	1	U	1	U	1	U	1	U	18			
	6/8/2005	10	U	10	U	10	U	10	U	1,900			
	8/24/2005	30	U	30	U	30	U	30	U	3,900			
	6/22/2006	1	U	1	U	1	U	1	U	12			
	7/20/2010	1	U	1	U	1	U	2	U	4.2			
	8/24/2011	1	U	1	U	1	U	5	U	1.3			
	1/9/2012	1	U	1	U	1	U	10	U	2			
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 3

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-22	6/8/2005	1	U	1	U	1	U	1	U	1	U		
	8/24/2005	1	U	1	U	1	U	1	U	0.65	J		
	6/23/2006	1	U	1	U	1	U	1	U	1	U		
	8/4/2010	1	U	1	U	1	U	5	U	1	U		
	8/24/2011	1	U	1	U	1	U	5	U	1	U		
	1/16/2012	1	U	1	U	1	U	5	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/13/2012	1	U	1	U	1	U	2	U	1	U		
	12/3/2012	1	U	1	U	1	U	2	U	1	U		
MW-31D	12/22/2005	1	U	1	U	1	U	1	U	67			
	6/8/2005	1	U	1	U	1	U	1	U	0.3	J		
	6/23/2006	1	U	1	U	1	U	1	U	3.4			
	7/22/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-31S	12/22/2005	1	U	1	U	1	U	1	U	1	U		
	6/8/2005	1	U	1	U	1	U	1	U	1	U		
	6/23/2006	1	U	1	U	1	U	1	U	1	U		
	7/22/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/16/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-33BR	2/18/2005	10		17		7.9	J		U	2,000			
	3/25/2005	130		95	J	68	J	100	U	14,000			
	4/29/2005	110		100		60	J	100	U	11,000			
	5/11/2005	98	J	140		69	J	36	J	10,000			
	6/1/2005	160		110		110		80	U	14,000			
	6/1/2005	90		90		55	J	100	U	9,900			
	8/26/2005	65	J	27	J	49	J	80	U	7,300			
	6/6/2006	20	U	20	U	20	U	20	U	2,000			
	8/12/2010	1	U	1	U	1.1		2	U	21			
	8/30/2011	15		1	U	21		2	U	45			
	1/10/2012	5	U	5	U	5	U	50	U	16			
	5/2/2012	10		3.9		28		10	U	100			
	8/13/2012	5		2	U	12		4	U	92			
	12/3/2012	2.1		2	U	2	U	4	U	66			

U: compound analyzed for but not detected
J: estimated value (above detection limit)
B: compound also found in Method Blank
Additional contaminants were detected, but were not reported above RI groundwater quality standards

MTBE: Methyl Tertiary-butyl ether
ppb: parts per billion
shaded values: above standards

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
BETA-1	5/4/2012	24		63		290		50		56			
	7/30/2012	7.8		2.1		79		26		32			
	12/3/2012	10		12		120		24		37			
BETA-2	5/4/2012	17		140		430		70		56			
	7/30/2012	1	U	1	U	4.6		3.2		8.9			
	12/3/2012	7		20		140		30		17			
MW-17BR	5/4/2012	1	U	1	U	1	U	2	U	5.7			
	8/9/2012	1	U	1	U	1	U	2	U	15			
	11/29/2012	1	U	1	U	1	U	2	U	17			
MW-18S	2/18/2005	550		64	JB	160			U	11,000			
	5/11/2005	5.8		0.91	J	6.8		6.6		75			
	6/1/2005	580		44	J	200		100	U	12,000			
	7/22/2005	350		100	U	74	J	44	J	9,500			
	8/24/2005	48		16	U	8.2	J	40		2,000			
	6/1/2006	530		100	U	250		270		11,000			
	10/19/2006	150		30	U	87		61		3,600			
	10/13/2009	1.9		1	U	4.4		4.4		210			
	1/22/2010	1	U	1	U	1	U	5	U	4.4			
	4/26/2010	1	U	1	U	1	U	2	U	4.2			
	7/20/2010	1	U	1	U	1	U	2	U	4.5			
	8/18/2010	1	U	1	U	1	U	2	U	3.4			
	9/14/2010	1	U	1	U	1	U	2	U	1.8			
	1/25/2011	1	U	1	U	1	U	2	U	5.2			
	4/22/2011	1	U	1	U	1	U	2	U	4.8			
	7/18/2011	1	U	1	U	1	U	2	U	2.8			
	10/31/2011	1	U	1	U	1	U	2	U	1	U		
	1/9/2012	1	U	1	U	1	U	2	U	1	U		
	4/30/2012	1	U	1	U	1	U	2	U	1	U		
	8/9/2012	1	U	1	U	1	U	2	U	1			
	11/29/2012	1	U	1	U	1	U	2	U	1	U		

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2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-18D	2/18/2005	1,500		300	B	1,100			U	23,000			
	4/29/2005	20	U	20	U	20	U	20	U	2,200			
	5/11/2005	20	U	5.3	J	20	U	20	U	3,100			
	6/1/2005	1,300		170	J	1,000		660		21,000			
	7/22/2005	940		83	J	1,100		210		17,000			
	8/24/2005	820		30	J	860		280		14,000			
	6/1/2006	620		30	J	940		100	U	9,900			
	10/19/2006	400		38	J	800		190		5,500			
	10/13/2009	41		1	U	140		52		600			
	1/22/2010	1	U	1	U	1	U	5	U	3.1			
	4/26/2010	1	U	1	U	1	U	2	U	1.2			
	7/20/2010	1	U	1	U	1	U	2	U	1.8			
	8/18/2010	1	U	1	U	1	U	2	U	5			
	9/14/2010	1	U	1	U	1	U	2	U	46			
	1/25/2011	1	U	1	U	1	U	2	U	2.7			
	4/22/2011	1	U	1	U	1	U	2	U	1.6			
	7/18/2011	1	U	1	U	1	U	2	U	1.9			
	10/31/2011	1	U	1	U	1	U	2	U	1.4			
	1/9/2012	1	U	1	U	1	U	2	U	1	U		
	4/30/2012	1	U	1	U	1	U	2	U	1	U		
	8/9/2012	1	U	1	U	1	U	2	U	1	U		
	11/29/2012	1	U	1	U	1	U	2	U	1	U		
MW-28BR	2/18/2005	8		21		8.8			U	1,400			
	3/25/2005	3.5	J	8	U	8	U	8	U	1,100			
	4/29/2005	8	U	8	U	8	U	8	U	830			
	5/11/2005	2.2	J	3.8	J	8	U	8	U	1,100			
	6/2/2005	10	U	9.3	JB	8.7	J	10	U	1,000			
	8/26/2005	6	U	6	U	6	U	6	U	620			
	6/20/2006	5	U	1.3	J	5	U	5	U	400			
	10/19/2006	3	U	3	U	3	U	3	U	380			
	8/5/2010	1	U	1	U	1	U	2	U	200			
	1/10/2012	2	U	2	U	2	U	20	U	67			
	4/30/2012	2	U	2	U	2	U	4	U	110			
	7/30/2012	4.9		3.8		13		8.2		270			
	8/14/2012	4.5		4.2		4.1		8	U	220			
	12/3/2012	10	U	10	U	38		20	U	260			

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AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-28D	2/18/2005	1,100		6,300		2,000		360		2,600			
	6/2/2005	690		6,100	B	3,000		370		2,000			
	7/22/2005	760		5,200		2,000		280		3,200			
	8/26/2005	520		2,900		1,200		190		3,200			
	6/20/2006	490		5,900		2,000		40	U	800			
	10/19/2006	360		1,700		1,600		240		1,100			
	10/13/2009	68		150		720		130		190			
	1/22/2010	36		93		640		80		110			
	4/26/2010	58		750		850		100	U	120			
	7/20/2010	16		2	U	200		17		140			
	9/14/2010	31		170		550		84		100			
	1/28/2011	7.7		8.9		53		6.3		36			
	4/22/2011	22		230		490		74		75			
	7/18/2011	15		28		420		100		60			
	10/31/2011	50	U	130		760		280		67			
	1/9/2012	19		21		510		100	U	49			
	4/30/2012	13		26		390		54		53			
	8/9/2012	10		8		230		44		37			
	11/29/2012	1	U	1.3		5.9		1	U	6.4			
MW-28S	2/18/2005	12		20		6.8	J		U	1,400			
	6/2/2005	47		10	U	10	U	10	U	1,200			
	7/22/2005	300		17	J	52		50	U	6,300			
	8/26/2005	480		70		150		93		8,400			
	6/20/2006	2.5		1	U	1	U	1	U	110			
	10/19/2006	2.6	J	6	U	2.6	J	6	U	950			
	10/13/2009	1	U	1	U	1	U	1	U	39			
	1/22/2010	1	U	1	U	1	U	5	U	1	U		
	4/26/2010	1	U	1	U	1.2		2	U	1	U		
	7/20/2010	1	U	1	U	1	U	2	U	6.2			
	9/14/2010	1	U	1	U	1	U	2	U	15			
	1/28/2011	1	U	1	U	1	U	2	U	2.4			
	4/22/2011	1	U	1	U	1	U	2	U	1	U		
	7/18/2011	1	U	1	U	1	U	2	U	89			
	10/31/2011	1	U	1	U	1	U	2	U	1	U		
	1/9/2012	1	U	1	U	1	U	10	U	1	U		
	4/30/2012	1	U	1	U	1	U	2	U	1	U		
	8/9/2012	1	U	1	U	1	U	2	U	1	U		
	11/29/20212	1	U	1	U	1	U	2	U	1	U		

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AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-30D	6/7/2005	5	U	5	U	5	U	5	U	780			
	7/22/2005	2	U	2	U	2	U	0.69	J	340			
	8/24/2005	1	U	1	U	1	U	1	U	140			
	6/21/2006	1	U	1	U	1	U	1	U	2.2			
	10/19/2006	1	U	1	U	1	U	1	U	0.75	J		
	7/20/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	5	U	1	U		
	1/9/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	11			
MW-30S	6/7/2005	1	U	1	U	1	U	1	U	2.3			
	7/22/2005	1	U	1	U	1	U	1	U	0.26	J		
	8/24/2005	1	U	1	U	1	U	1	U	1	U		
	6/21/2006	1	U	1	U	1	U	1	U	1	U		
	10/19/2006	1	U	1	U	1	U	1	U	1	U		
	7/20/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/9/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-32D	6/8/2005	21	J	40	U	40	U	40	U	7,200			
	6/22/2006	1	U	1	U	1	U	1	U	25			
	10/24/2006	0.57	J	1	U	1	U	1	U	64			
	1/13/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/13/2012	1	U	1	U	1	U	2	U	1	U		
	11/29/2012	1	U	1	U	1	U	2	U	1	U		
MW-32S	6/8/2005	0.92	J	1	U	1	U	1	U	200			
	6/22/2006	2	U	2	U	2	U	2	U	260			
	10/24/2006	1	U	1	U	1	U	1	U	200			
	1/13/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/13/2012	1	U	1	U	1	U	2	U	1	U		
	11/29/2012	1	U	1	U	1	U	2	U	1	U		

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AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-41M	10/24/2006	6	U	6	U	6	U	6	U	760			
	7/22/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/13/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-41S	6/23/2006	1	U	1	U	1	U	1	U	1	U		
	10/24/2006	1	U	1	U	1	U	1	U	1	U		
	7/22/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	180		4.3		2	U	1	U		
	1/13/2012	1	U	1	U	1	U	10	U	1	U		
	5/2/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-42D	6/8/2005	1	U	1	U	1	U	1	U	21			
	7/22/2005	40	U	40	U	40	U	40	U	3,400			
	6/22/2006	6.5	J	20	U	20	U	20	U	1,800			
	10/24/2006	30	U	30	U	30	U	30	U	3,500			
	7/22/2010	1	U	1	U	1	U	2	U	69			
	8/24/2011	1	U	1	U	1	U	2	U	7			
	1/13/2012	1	U	1	U	1	U	10	U	1.6			
	5/1/2012	1	U	1	U	1	U	5	U	2.8			
	8/10/2012	1	U	1	U	1	U	2	U	2.9			
	11/30/2012	1	U	1	U	1	U	2	U	5.9			
MW-42M	10/24/2006	11		1	U	1	U	1	U	4,700			
	7/22/2010	1	U	1	U	1	U	2	U	13			
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/13/2012	1	U	1	U	1	U	10	U	4.4			
	5/1/2012	1	U	1	U	1	U	5	U	2.4			
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1.2			

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AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-42S	6/8/2005	1	U	1	U	1	U	1	U	1	U		
	7/22/2005	1	U	1	U	1	U	1	U	0.48	J		
	6/22/2006	1	U	1	U	1	U	1	U	66			
	10/24/2006	1	U	1	U	1	U	1	U	0.47	J		
	7/22/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	1	U	1	U	2	U	1	U		
	1/13/2012	1	U	1	U	1	U	10	U	2.3			
	5/1/2012	1	U	1	U	1	U	5	U	2			
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1	U	1	U	1	U	2	U	1	U		
MW-44	6/1/2005	11		10	U	6	J	20		1,400			
	5/31/2006	38		4.9	J	61		25		2,400			
	10/19/2006	2.1	J	3.2	J	2.6	J	6		710			
	8/18/2010	1	U	1	U	1	U	2	U	5			
	1/9/2012	1	U	1	U	1	U	10	U	4			
	4/30/2012	1	U	1	U	1	U	2	U	4.2			
	8/14/2012	1	U	76		1	U	2	U	4.4			
	11/29/2012	1	U	1	U	1	U	2	U	9.2			
MW-45D	6/7/2005	400		45		210		140		2,200			
	7/22/2005	450		36		110		69		2,000			
	8/24/2005	360		37		120		74		1,600			
	6/21/2006	220		57		64		10	U	1,400			
	10/19/2006	320		59		480		160		1,600			
	10/13/2009	65		4.6		280		93		200			
	1/22/2010	33		1	U	160		21		120			
	4/26/2010	17		1	U	68		4.9		78			
	7/20/2010	11		1	U	13		2	U	77			
	9/14/2010	8.6		1	U	1.7		2	U	68			
	1/25/2011	3.2		1	U	1	U	2	U	40			
	4/22/2011	3.7		1	U	9.1		4.7		43			
	7/18/2011	1	U	1	U	1	U	2	U	33			
	10/31/2011	1.1		1	U	1	U	2	U	23			
	1/9/2012	1	U	1	U	1	U	10	U	5.7			
	4/30/2012	1	U	1	U	1	U	2	U	17			
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	11/30/2012	1.8		1	U	1	U	2	U	3.8			

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LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments
GA Groundwater Objective	--	5		1000		700		100		40		
MW-45S	6/7/2005	140		40	U	9.6	J	40	U	3,800		
	7/22/2005	220		40	U	40	U	40	U	5,700		
	8/24/2005	27		4	U	2.9	J	4	U	470		
	6/21/2006	3.6	J	4	U	4	U	4	U	530		
	10/19/2006	0.86	J	2	U	2	U	2	U	330		
	7/20/2010	1	U	1	U	1	U	2	U	3.6		
	1/9/2012	1	U	1	U	1	U	10	U	1.2		
	4/30/2012	1	U	1	U	1	U	2	U	1	U	
	8/10/2012	1	U	2.5		1	U	2	U	1	U	
	11/30/2012	1	U	1	U	1	U	2	U	1	U	
MW-46R	1/9/2012	1	U	1	U	1	U	10	U	1	U	
	4/30/2012	1	U	1	U	1	U	2	U	1	U	
	8/14/2012	1	U	1	U	1	U	2	U	2.3		
	12/3/2012	1	U	1	U	1	U	2	U	1.6		
MW-47R	8/29/2005	50		2.8	J	6	U	5.8	J	550		
	7/28/2006	14		0.33	J	1	U	1	U	880		
	10/24/2006	36		10	U	10	U	10	U	1,000		
	1/9/2012	1	U	4.1		1	U	10	U	1.8		
MW-49R	7/28/2006	150		370		260		5	U	870		
	10/24/2006	250		200		660		100		1,500		
	10/13/2009	1	U	1	U	1	U	1	U	4.8		
	1/22/2010	1	U	1	U	1	U	5	U	12		
	4/26/2010	35		5	U	110		16		180		
	7/20/2010	12		1	U	24		8.3		51		
	9/14/2010	3.1		1	U	3.6		3.1		7.6		
	1/25/2011	1	U	1	U	1	U	2	U	3.5		
	4/22/2011	1	U	1	U	1	U	2	U	7.4		
	7/18/2011	1	U	1	U	1	U	2	U	1	U	
	10/31/2011	1	U	1	U	1	U	2	U	1	U	
	1/9/2012	1	U	1	U	1	U	10	U	1.2		
MW-50R	7/28/2006	84		5.5		42		9.1		460		
	10/24/2006	140		8.2		67		11		200		
	1/9/2012	3.6		1	U	1	U	10	U	4.1		
MW-55	6/7/2005	10		410		10	U	10	U	900		
	1/9/2012	1	U	1	U	1	U	10	U	1.6		
MW-56	6/1/2005	2.7		0.92	J	13		7.4		11		
	6/21/2006	1	U	1	U	1.5		1	U	0.55	J	
	10/19/2006	1.1		1	U	12		1	U	4.6		Could not locate
	5/4/2012	1	U	1	U	1	U	2	U	1	U	Found in sand pile
	8/9/2012	1	U	1	U	1	U	2	U	1	U	
	11/29/2012	1	U	1	U	1	U	2	U	1	U	

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AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-58BR	5/3/2012	27		290		280		70		79			
	7/30/2012	37		450		590		95		150			
	8/14/2012	7.2		75		68		26		47			
	12/3/2012	16		89		92		37		63			
MW-58D	2/18/2005	2,200		15,000	B	2,700			U	6,000			
	6/1/2005	1,400		15,000		2,200		1,000		2,800			
	8/24/2005	1,500		15,000		2,700		380		3,900			
	6/21/2006	1,200		13,000		3,000		150	U	1,500			
	10/19/2006	790		9,200		2,900		290		1,600			
	10/13/2009	190		4,200		1,700		480		330			
	1/22/2010	310		6,300		2,100		180		170			
	4/26/2010	330		7,500		2,100		2,500		120			
	7/20/2010	160		3,300		1,700		200	U	230			
	9/14/2010	160		2,500		1,700		210		220			
	1/28/2011	23		38		120		42		79			
	4/22/2011	220		6,300		1,900		310		70			
	7/18/2011	120		3,200		1,700		280		97			
	10/31/2011	70		1,300		1,100		280		52			
	1/9/2012	33		5.6		330		50	U	19			
	5/4/2012	78		360		1,300		210		47			
	8/9/2012	52		160		1,100		130		45			
	11/29/2012	1	U	1	U	16		5.3		5.6			
MW-58S	2/18/2005	33		17		6			U	1,100			
	6/1/2005	260		35	J	50	U	50	U	6,300			
	10/19/2006	1,800		12,000		2,800		250		4,500			
	10/13/2009	360		460		1,400		460		590			
	1/22/2010	1	U	1	U	1	U	5	U	210			
	4/26/2010	30		5	U	140	U	10		78			
	7/20/2010	130		69		410		91		89			
	9/14/2010	340		530				150		200			
	1/28/2011	6.6		1	U	6.6		7.1		34			
	4/22/2011	2.9		1	U	8.3		2	U	14			
	7/18/2011	35		1.2		3.7		32		35			
	10/31/2011	12		1	U	1	U	2	U	22			
	1/9/2012	1.2		1	U	8		10	U	5.2			
	5/4/2012	3		1	U	1.1		2	U	7.9			
	8/9/2012	38		1	U	40		70		25			
	11/29/2012	1	U	1	U	1	U	2	U	1.4			

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AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-59D	2/18/2005	360		180	B	350		120		3,200			
	6/7/2005	130		6.6	J	75		20	U	2,100			
	8/24/2005	39		20	U	24		20	U	1,800			
	6/21/2006	1	U	1	U	1	U	1	U	98			
	10/19/2006	0.85	J	3	U	3	U	3	U	360			
	10/13/2009	1	U	1	U	1	U	1	U	32			
	4/26/2010	1	U	1	U	1	U	2	U	1	U		
	7/20/2010	1	U	1	U	1	U	2	U	1	U		
	9/14/2010	1	U	1	U	1	U	2	U	13			
	4/22/2011	1	U	1	U	1	U	2	U	1	U		
	7/18/2011	1	U	1	U	1	U	2	U	1	U		
	10/31/2011	1	U	1	U	1	U	2	U	2.2			
	1/9/2012	1	U	1	U	1	U	10	U	1	U		
MW-59D New	5/3/2012	1	U	1	U	1	U	2	U	35			
	8/9/2012	1.9		1	U	1	U	2	U	22			
	11/29/2012	1	U	1	U	1	U	2	U	11			
MW-59M	2/18/2005	750		86	JB	78	J		U	19,000			
	6/7/2005	210		15	J	280		50	U	5,500			
	8/24/2005	530		150	U	150		150	U	17,000			
	6/21/2006	290		40	U	22	J	40	U	4,800			
	10/19/2006	110		20	U	20	U	20	U	2,700		Located cover.	
	7/20/2010	1	U	1	U	1	U	2	U	38		No well	
MW-59M New	5/3/2012	1	U	1	U	1	U	2	U	3.3			
	8/9/2012	1.4		1	U	1	U	2	U	24			
	11/29/2012	1	U	1	U	1	U	2	U	57			
MW-59S	2/18/2005	4.8	J	6.3	JB	6.1	J		U	1,400			
	6/7/2005	870		74	J	170	J	200	U	27,000			
	8/24/2005	430		13	J	40	U	74		4,600			
	6/21/2006	4.7		1.2	J	1.8	J	2	U	250			
	10/19/2006	2.4		1	U	0.33	J	1	U	200			
	7/20/2010	1	U	1	U	1	U	2	U	1.3			
	1/9/2012	1	U	1	U	1	U	10	U	1	U		
MW-59SNew	5/3/2012	1	U	1	U	1	U	2	U	4.3			
	8/9/2012	1	U	1	U	1	U	2	U	2.3			
	11/29/2012	1	U	1	U	1	U	2	U	25			

PASCOAG MAIN STREET MOBIL

2005-2012 VOC GROUNDWATER ANALYTICAL RESULTS

AREA 4

LOCATION	DATE	Benzene		Toluene		Ethylbenzene		Naphthalene		MTBE		Comments	
GA Groundwater Objective	--	5		1000		700		100		40			
MW-59BR	5/3/2012	1	U	1	U	1	U	2	U	33			
	8/9/2012	1	U	1	U	1	U	2	U	110			
	11/29/2012	1.7		1	U	1	U	2	U	180			
MW-61M	10/19/2006	10	U	10	U	9	J	10	U	1,500			
	7/20/2010	1	U	1	U	1	U	2	U	1	U		
	8/24/2011	1	U	5.8		1	U	2	U	1	U		
	1/9/2012	1	U	1	U	1	U	10	U	14			
	5/1/2012	1	U	1	U	1	U	5	U	3			
	8/10/2012	1	U	1	U	1	U	2	U	1.1			
	11/30/2012	1	U	1	U	1	U	2	U	1.3			
MW-62M	10/24/2006	40	U	40	U	40	U	40	U	4,000			
	7/22/2010	1	U	1	U	1	U	10	U	1	U		
	8/24/2011	1	U	5.8		1	U	2	U	1	U		
	1/13/2012	1	U	1	U	1	U	10	U	1	U		
	5/1/2012	1	U	1	U	1	U	5	U	1	U		
	8/10/2012	1	U	1	U	1	U	2	U	1	U		
	12/3/2012	1	U	1	U	1	U	2	U	1	U		
MW-63R	10/24/2006	6	U	6	U	6	U	6	U	790			
	1/16/2012	1	U	1	U	1	U	10	U	1	U		

U: compound analyzed for but not detected

J: estimated value (above detection limit)

B: compound also found in Method Blank

MTBE: Methyl Tertiary-butyl ether

ppb: parts per billion

shaded values: above standards

Additional contaminants were detected in various wells, but were not reported above RI groundwater quality standards. Refer to laboratory analytical reports for additional information.

PASCOAG MAIN STREET MOBIL

2005-20012 VOC RIVERWATER ANALYTICAL RESULTS BEFORE AND AFTER SITE

LOCATION	DATE	Benzene		Toluene		Ethyl benzene		Naph-thalene		MTBE	
Pascoag River @ Sayles Avenue	7/22/2005	1	U	1	U	1	U	1	U	0.71	J
Pascoag River @ Sayles Avenue	7/28/2006	1	U	1	U	1	U	1	U	1	U
Pascoag River @ Sayles Avenue	1/26/2012	1	U	1	U	1	U	2	U	1	U
Pascoag River @ Summer/Grove	7/22/2005	0.2	J	1	U	1	U	1	U	6.3	
Pascoag River @ Summer/Grove	7/28/2006	0.51	J	1	U	0.36	J	1	U	9.8	
Pascoag River @ Summer/Grove	1/26/2012	1	U	1	U	1	U	2	U	1	U
Clear River @ Union Avenue	7/22/2005	1	U	1	U	1	U	1	U	3.6	
Clear River @ Union Avenue	7/28/2006	1	U	1	U	1	U	1	U	2.9	
Clear River @ Union Avenue	1/26/2012	1	U	1	U	1	U	2	U	1	U
Clear River @ River Street	7/22/2005	1	U	1	U	1	U	1	U	1.6	
Clear River @ River Street	7/28/2006	1	U	1	U	1	U	1	U	2.1	
Clear River @ River Street	1/26/2012	1	U	1	U	1	U	2	U	1	U

U: compound analyzed for but not detected
J: estimated value (above detection limit)
B: compound also found in Method Blank

MTBE: Methyl Tertiary-butyl ether
ppb: parts per billion
shaded values: above standards

Additional contaminants were detected in various wells, but were not reported above RI groundwater quality standards. Refer to laboratory analytical reports for additional information.

Appendix J: Monitoring Well Elevation Survey

Monitoring Well
Elevation Survey January 2012
Pascoag, RI

		Adjusted				Adjusted	DTW	GW	
Well ID	TOC. Elev	TOC Elev.	+	-	Sta. Elev.	Sta. Elev.	(FT)	ELEV. (FT)	NOTES
MW-58S	100.00	372.17	0.54	--	100.54	372.71	9.75	362.42	ASSIGNED AN ELEVATION OF 100.00
MW-58D	97.90	370.07		2.645			8.11	361.96	
MW-18S	94.01	366.18		6.53			3.71	362.47	
MW-18D	93.67	365.84		6.87			3.37	362.47	
MW-44	97.01	369.18		3.53			6.15	363.03	
BETA-1	97.96	370.13		2.58			--	--	
MW-46R	92.08	364.25		8.46			1.20	363.05	
MW-47R	90.76	362.93		9.78			±0.50	--	
BM-1	98.08	370.25		2.46			--	--	Benchmark created on January 19th
BM-2	94.62	366.79		5.92			--	--	Benchmark created on January 19th
BM-1	98.08	370.25	1.18	--	99.26	371.43	--	--	
MW-28S	96.215	368.39		3.045			6.08	362.31	
MW-28D	96.11	368.28		3.15			5.90	362.38	
MW-28BR	96.31	368.48		2.95			6.45	362.03	
BETA-2	96.43	368.60		2.83			--	--	
MW-49R	92.00	364.17		7.26			2.05	362.12	
MW-55	91.62	363.79		7.64			1.98	361.81	
BM-3	94.15	366.32		5.11			--	--	Benchmark created on January 19th
SMH	94.01	366.18		5.25			--	--	SMH ADJACENT TO HOUSE #42
MW-59D	93.84	366.01		5.42			3.50	362.51	
MW-59S	93.79	365.96		5.47			3.71	362.25	
BM-3	94.15	366.32	5.00	--	99.15	371.32	--	--	
MW-45S	93.685	365.86		5.465			3.80	362.06	
MW-45D	93.73	365.90		5.42			3.78	362.12	
MW-50R	92.35	364.52		6.80			2.75	361.77	
BM-4	94.90	367.07		4.25			--	--	Benchmark created on January 19th
BM-4	94.90	367.07	7.52	--	102.42	374.59	--	--	
MW-33BR	99.84	372.01		2.58			8.36	363.65	
MW-21S	100.16	372.33		2.26			9.40	362.93	
MW-21D	100.43	372.60		1.99			8.54	364.06	
MW-30S	95.36	367.53		7.06			5.38	362.15	

Monitoring Well
Elevation Survey January 2012
Pascoag, RI

		Adjusted				Adjusted	DTW	GW	NOTES
Well ID	TOC. Elev	TOC Elev.	+	-	Sta. Elev.	Sta. Elev.	(FT)	ELEV. (FT)	
MW-30D	96.00	368.17		6.42			5.22	362.95	
BM-3	94.16	366.33		8.26			--	--	
MW-41S	95.53	367.70		6.89			4.44	363.26	
MW-41M	95.90	368.07		6.52			5.72	362.35	
MW-32S	94.77	366.94		7.65			4.47	362.47	
MW-32D	94.94	367.11		7.48			4.80	362.31	
MW-51R	92.02	364.19		10.40			2.50	361.69	
BM-3	94.16	366.33	5.27	--	99.43	371.60	--	--	
MW-61M	93.35	365.52		6.08			3.47	362.05	
BM-4	94.895	367.07		4.53			--	--	
BM-4	94.90	367.07	5.73	--	100.63	372.80	--	--	
MW-63R	90.42	362.59		10.21			1.16	361.43	
MW-62M	95.395	367.57		5.235			5.64	361.93	
BM-5	95.13	367.30		5.50			--	--	Benchmark created on January 19th
BM-5	95.13	367.30	5.33	--	100.46	372.63	--	--	
MW-42D	94.80	366.97		5.66			5.52	361.45	
MW-42M	94.87	367.04		5.59			5.58	361.46	
MW-42S	95.125	367.30		5.335			5.97	361.33	
BM-4	94.91	367.08		5.55			--	--	
BM-4	94.90	367.07	4.51	--	99.41	371.58	--	--	
FENCE POST	93.81	365.98		5.60			--	--	
FENCE POST	93.81	365.98	5.95	--	99.76	371.93	--	--	
BM-2	94.64	366.81		5.12			--	--	
BM-1	98.10	370.27		1.66			--	--	
BM-1	98.08	370.25	19.31	--	117.39	389.56	--	--	Benchmark created on January 19th survey
MW-34BR	111.99	384.16		5.4			13.86	370.30	
LE-7	115.14	387.31		2.25			17.60	369.71	
Cover LE-7	115.48	387.65		1.91			--	--	
Cover LE-7	115.48	387.65	7.55	--	123.03	395.2	--	--	
LE-6	120.17	392.34		2.86			10.54	381.80	

Monitoring Well
Elevation Survey January 2012
Pascoag, RI

		Adjusted				Adjusted	DTW	GW	NOTES
Well ID	TOC. Elev	TOC Elev.	+	-	Sta. Elev.	Sta. Elev.	(FT)	ELEV. (FT)	
LE-16	115.70	387.87		7.33			22.90	364.97	
Curb Stop	104.05	376.22		18.98			--	--	
Curb Stop	104.05	376.22	6.67	--	110.72	382.89	--	--	
LE-15S	99.82	371.99		10.90			7.17	364.82	
LE-15M	99.87	372.04		10.85			7.11	364.93	
LE-15D	99.30	371.47		11.42			6.63	364.84	
Curb Stop	104.05	376.22		6.67			--	--	
BM-1	98.10	370.27		12.62			--	--	Checks with Benchmark Elev. 100.00
Curb Stop	104.05	376.22	2.09	--	106.14	378.31	--	--	
MW-22	96.99	369.16		9.15			5.09	364.07	
MW-20S	103.09	375.26		3.05			11.04	364.22	
MW-20D	103.56	375.73		2.58			11.5	364.23	
MW-33BR	99.82	371.99		6.32			8.36	363.63	Checks with Elev. 99.84 from survey above
BM-4	94.90	367.07	7.57	--	102.47	374.64	--	--	Benchmark created on January 19th Survey
Hyd. Bonnet Bolt	98.77	370.94		3.70			--	--	Benchmark created on January 24th
Hyd. Bonnet Bolt	98.77	370.94	7.02	--	105.79	377.96	--	--	
MW-14M	104.34	376.51		1.45			13.24	363.27	
MW-14D	104.54	376.71		1.25			13.05	363.66	
Hyd. Bonnet Bolt	98.77	370.94		7.02			--	--	
Hyd. Bonnet Bolt	98.77	370.94	3.74	--	102.51	374.68	--	--	
SMH (Silver Lake)	98.62	370.79		3.89			--	--	Benchmark created on January 24th
SMH (Silver Lake)	98.62	370.79	4.92	--	103.54	375.71	--	--	
MW-31S	99.80	371.97		3.74			9.47	362.50	
MW-31D	99.41	371.58		4.13			9.25	362.33	
LE-3D	100.46	372.63		3.08			9.38	363.25	
LE-3I	100.35	372.52		3.19			9.28	363.24	
SMH (Silver Lake)	98.62	370.79		4.92			--	--	In front of house on corner lot
SMH (Silver Lake)	98.62	370.79	3.23	--	101.85	374.02	--	--	
LE-2	97.55	369.72		4.30			5.98	363.74	
LE-1	97.61	369.78		4.24			6.77	363.01	
SMH (Silver Lake)	98.62	370.79		3.23			--	--	

Monitoring Well
Elevation Survey January 2012
Pascoag, RI

		Adjusted				Adjusted	DTW	GW	NOTES
Well ID	TOC. Elev	TOC Elev.	+	-	Sta. Elev.	Sta. Elev.	(FT)	ELEV. (FT)	
Pavement Shot	98.45	370.62		3.40			--	--	
Pavement Shot	98.45	370.62	3.96	--	102.41	374.58	--	--	
Hyd. Bonnet Bolt	98.77	370.94		3.64			--	--	
BM-3	94.17	366.34		8.24			--	--	Checks with Elev. 94.15 from survey above
MW-18D	93.67	365.84	7.91	--	101.58	373.75			
MW-17BR	97.46	369.63		4.12					
MW-58D	97.90	370.07	3.7	--	101.60	373.77			
MW-58BR	94.32	366.49		3.58					
MW-28D	96.11	368.28	2.81	--	98.92	371.09			
MW-28BR (new)	95.19	367.36		3.73					Casing was adjusted when pump intalled
MW-59S(NEW)	93.74	365.91		5.18					
MW-59I(New)	93.68	365.85		5.24					
MW-59D(NEW)	93.67	365.84		5.25					
MW-59BR	93.30	365.47		5.62					
MW-34BR	111.99	384.16	11.06	--	123.05	395.22			
TP Hyd Bon Bolt	121.4	393.57		1.65					
TP Hyd Bon Bolt			7.57	--	128.97	401.14			
MW-71BR	124.85	397.02		4.12					
MW-71D	124.88	397.05		4.09					
MW-70BR	126.71	398.88		2.26					
MW-70D	123.56	395.73		5.41					
AE-11	124.24	396.41		4.73					
AE-10	124.43	396.6		4.54					
AE-6	125.26	397.43		3.71					